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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PENGFEI XIA, QIANG WU, DAVID MAZZARESE, YONGXING ZHOU, and YANG TANG

Appeal 2015-004610
Application 13/086,060
Technology Center 2600

Before THU A. DANG, CARL L. SILVERMAN, and SCOTT E. BAIN, *Administrative Patent Judges*.

BAIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1–3, 6–8, 11, 16, 20–22, 25–28, and 35–37, which constitute all claims pending in the application. Claims 4, 5, 9, 10, 12–15, 18, 19, 23, 24, and 29–34 have been canceled. Claim 17 is indicated to contain allowable subject matter, but is objected to as being dependent upon a rejected base claim. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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[1] Appellants identify Futurewei Technologies, Inc. as the real party in interest. App. Br. 2.

STATEMENT OF THE CASE

Introduction

Appellants' invention relates to feeding back channel information in a communications system in order to, for example, improve capacity. Spec. ¶¶ 1–3. Claims 1, 20, and 28 are independent. Claim 1 is illustrative of the invention and the subject matter of this appeal, and reads as follows (with the disputed limitation in italics):

> 1. A method for communications device operations, the method comprising:
>
> generating feedback information, wherein the feedback information comprises at least wideband channel statistics ("WCS") and long term wideband channel statistics ("LTWCS"), wherein the LTWCS comprise rank indicator (RI) information, wherein the WCS comprise a precoding matrix indicator (PMI), *wherein the RI and the PMI are jointly encoded*, and wherein the PMI is a part of a codebook used to quantize the LTWCS;
>
> encoding the feedback information to produce a feedback payload; and
>
> transmitting the feedback payload to a communications server serving a communications device.

App. Br. 14 (Claims App.).

Claims 1–3, 6–8, 11, 16, 20–22, 25–28, and 35–37 stand rejected under 35 U.S.C. § 102(e) as anticipated by Chen et al. (US 2009/0154588 A1; pub. June 18, 2009) ("Chen"). Non-Final Act. 5–10.

ANALYSIS

We have reviewed the Examiner's rejections in light of the arguments raised in the Briefs, on the record before us. For the reasons set forth below, we do not sustain the Examiner's rejections.

Claim 1

Appellants argue the Examiner erred in rejecting independent claim 1 as anticipated by Chen, because Chen fails to disclose the limitation "generating feedback information . . . wherein the RI [rank indicator] and PMI [precoding matrix indicator] are *jointly encoded*." App. Br. 5–7 (emphasis added). Specifically, Appellants contend the elements the Examiner finds to be the "rank indicator" and "precoding matrix indicator" in Chen are specifically disclosed (in Chen) as being "separately encoded," not jointly encoded as required by claim 1. *Id.*

The Examiner relies primarily on Chen Figure 1 as disclosing the disputed limitation. Ans. 2–3; Non-Final Act. 6. Figure 1 is reproduced below.

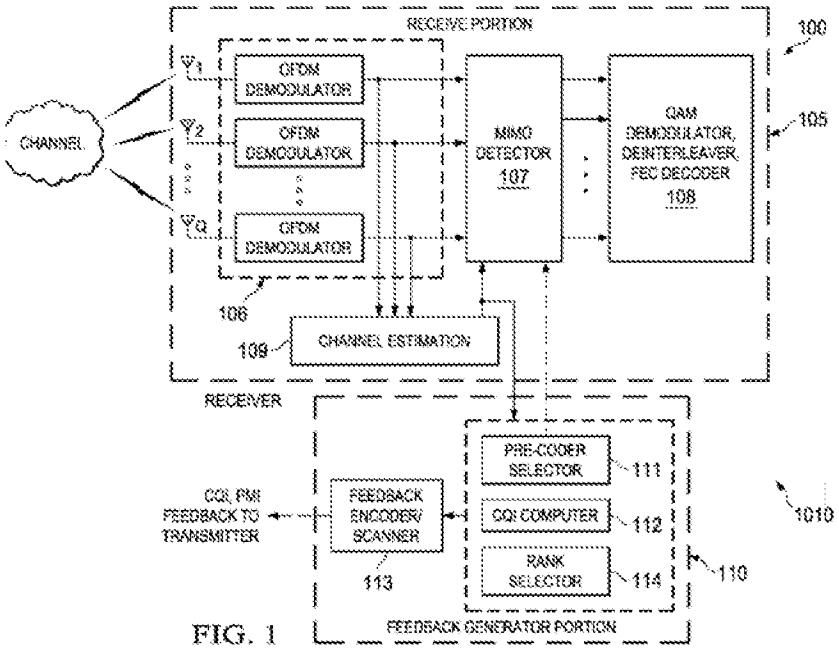

FIG. 1

Figure 1 is a "system block diagram" of a receiver and transmitter in an orthogonal frequency division multiplexing (OFDM) communications system, utilizing a feedback generator. Chen ¶ 54. The figure includes blocks labeled "rank selector" (114) and "pre-coder selector" (111), which the Examiner finds to disclose Appellants' claimed "rank indicator" (RI) and "precoding matrix indicator" (PMI), respectively. Non-Final Act. 6; Ans. 3–5. The figure also includes a block labelled "feedback encoder" (113). The Examiner finds "[F]igure 1 shows that PMI and [R]I *are sent as one input* to the feedback encoder 113 and the encoder 113 *produces one single output.*" Non-Final Act. 6 (boldface omitted) (emphasis added). Thus, according to the Examiner, Chen discloses PMI and RI are "jointly encoded." *Id.*; Ans. 3–5.

The Examiner's reliance on the block diagram, however, is misplaced. As Appellants argue, App. Br. 6, Chen discloses the "precoding matrix selection and . . . rank R [are] *separately encoded.*" Chen ¶ 56. Although

the Figure 1 block diagram does include a directional arrow suggesting pre-coder selector 111 (PMI), CQI computer 112, and rank selector 114 all send output to feedback encoder/scanner 113, the arrow represents the direction of data flow, not how any particular data is encoded (*e.g.*, jointly or separately encoded). *Id.*[2] Moreover, although the Examiner also relies on Chen's statement that the "precoding matrix selection is jointly encoded to achieve feedback transmission compression," Ans. 3 (emphasis omitted) (quoting Chen ¶ 56), the very next sentence in Chen clarifies that this disclosure refers to joint encoding of the precoding matrix selection (PMI) *and CQI*, not RI. Chen ¶ 56.

Accordingly, on the record before us, we are persuaded by Appellants' argument the Examiner erred in finding Chen discloses "wherein the RI [rank indicator] and PMI [precoding matrix indicator] are jointly encoded," as recited in claim 1.[3] We, therefore, do not sustain the rejection of claim 1 under 35 U.S.C. § 102(e) as anticipated by Chen.

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[2] As defined in Appellants' Specification, "jointly encoded" means "both fields encoded using a single code." Spec. ¶ 74; *id* ¶¶ 41–42 (use of "joint codebook"); *see also* Oxford English Dictionary Online, http://www.oed.com/view/Entry/101556?redirectedFrom=jointly#eid (last visited 10/25/2016) (defining "jointly" as "in conjunction, combination, or concert" and "at the same time").

[3] Although not argued by Appellants or cited by the Examiner, we are mindful the disputed limitation is contained in a "wherein" clause. Nevertheless, in the context of claim 1, the limitation gives meaning and purpose to the claim and thus has patentable weight. *See Griffin v. Bertina*, 285 F.3d 1029, 1033–34 (Fed. Cir. 2002) ("wherein" clause limits a process claim where the clause gives "meaning and purpose" to the steps in the claim); *see also* Manual of Patent Examining Procedure § 2111.04.

Remaining Claims

Independent claim 28 includes the limitation identical to claim 1, "wherein the RI [rank indicator] and PMI [precoding matrix indicator] are jointly encoded." We do not sustain the rejection of claim 28 under 35 U.S.C. § 102(e) as anticipated by Chen for the reasons set forth above.

Independent claim 20 recites "wherein the RI and the PMI are jointly *decoded*," App. Br. 15 (Claims App.), which is nearly identical to the disputed limitation of claim 1 (with "decoded" substituted for "encoded"). The Examiner's rejection is identical to the rejection of claim 1, citing the block diagram of Figure 1 and Chen's references to "encoding." Non-Final Act. 7; Ans. 8. Just as we do not find the directional arrows of Figure 1 to disclose how elements are "encoded," *see supra*, they do not disclose the claimed "joint decod[ing]," and the cited portions of Chen's disclosure relate to encoding, not decoding. Chen ¶ 56. Accordingly, we do not sustain the rejection of claim 20 under 35 U.S.C. § 102(e) as anticipated by Chen for the reasons set forth above.

We also do not sustain the rejection of the remaining claims, all of which depend from claims 1, 20, or 28, respectively, for the same reasons.

DECISION

We reverse the Examiner's rejections of claims 1–3, 6–8, 11, 16, 20–22, 25–28, and 35–37.

REVERSED