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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YUQIANG TANG and MARK A. HARRIS

Appeal 2017-008142
Application 13/963,026
Technology Center 2400

Before MAHSHID D. SAADAT, DENISE M. POTHIER, and
CHARLES J. BOUDREAU, *Administrative Patent Judges*.

POTHIER, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 22–41. App. Br. 14 (Claims App'x).² Claims 1–21 have been canceled. Response to Office Action 2, filed July 5, 2016. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

¹ The real party in interest is listed as Apple Inc. App. Br. 2.

² Throughout this opinion, we refer to (1) the Final Action (Final Act.) mailed September 1, 2016, (2) the Appeal Brief (App. Br.) filed December 22, 2016, (3) the Examiner's Answer (Ans.) mailed March 23, 2017, and (4) the Reply Brief (Reply Br.) filed May 9, 2017.

Invention

Mobile communication systems include cells for mobile stations and base stations to communicate. Spec. ¶ 2, Fig. 1. These systems include control channels (e.g., paging channels) carrying control data between mobile stations and base stations and communicating at a fixed power level. *Id.* ¶¶ 7–8. The power level of the paging channel is selected to achieve a compromise between reliability of communication of control messages and available bandwidth or capacity within a given cell. *Id.* ¶ 8. More specifically, the higher the power level, the lower the available bandwidth will be in the cell, whereas at lower power levels, communication error likelihood increases and reliability decreases. *Id.* Appellants’ invention concerns a method, transmitter, and medium “to dynamically adjust the power level of a control channel for communicating control messages to enhance flexibility and performance.” *Id.* ¶ 10.

Claim 22 is reproduced below with emphases:

22. A method for performing wireless communications in a mobile communications network, comprising:
a communication device determining a type of a message to be communicated in a control channel;
the communication device determining a power level, based on the determined type of the message, for transmission of the message using the control channel, wherein said determining the power level comprises setting different power levels for different types of messages carried in the control channel, wherein a plurality of specific power levels are associated with at least one type of message;
the communication device setting the power level for transmission of the message based on said determining; and
after setting the power level for transmission, *the communication device transmitting the message in the control channel using the determined power level.*

The Examiner relies on the following as evidence of unpatentability:

Chennakeshu	US 5,918,174	June 29, 1999
Kayama	US 2003/0096631 A1	May 22, 2003
Larghi	US 6,657,976 B1	Dec. 2, 2003

The Rejections

Claims 22, 26–30, 34–37, 40, and 41 are rejected under 35 U.S.C. § 103(a) (pre-AIA) or § 103 as unpatentable over Chennakeshu and Kayama. Final Act. 3–5.

Claims 25 and 33 are rejected under 35 U.S.C. § 103(a) (pre-AIA) or § 103 as unpatentable over Chennakeshu, Kayama, and Larghi. Final Act. 6–7.³

Related Appeals

This application is a continuation of U.S. Application No. 13/957,607 (now abandoned), which is a continuation of U.S. Application No. 13/539,594 (now US 8,504,093), which in turn is a continuation of U.S. Application No. 10/389,473 (now US 8,238,956). No terminal disclaimer has been filed in the instant application.

Notably, yet another application, U.S. Application No. 13/962,395, was appealed to the Board on December 22, 2016, and was assigned Appeal No. 2017-008157. We remind Appellants of the requirement to identify

by application, patent, appeal, interference, or trial number all other prior and pending appeals, interferences, trials before the Board, or judicial proceedings (collectively, “related cases”)

³ The Examiner has withdrawn the rejection of claims 23, 24, 31, 32, 38, and 39 based on Chennakeshu, Kayama, and Petrus (US 2004/0005905 A1, published Jan. 8, 2004) presented in Final Action (Final Act. 6). Ans. 2.

which satisfy all of the following conditions: involve an application or patent owned by the appellant or assignee, are known to the appellant, the appellant's legal representative, or assignee, and may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal[.]

37 C.F.R. § 41.37(c)(1)(ii).

THE OBVIOUSNESS REJECTION OVER
CHENNAKESHU AND KAYAMA

Claims 22, 27–30, 35–37, and 41

Regarding independent claim 22,⁴ the Examiner finds Chennakeshu teaches a communication device determining (1) a message type in a control channel (e.g., a paging signal in a paging channel (PCH)) and (2) a power level based on the message type using power level indicator 36. Final Act. 3 (citing Chennakeshu 6:32–40, 7:7–16, 28–33, Fig. 2). Chennakeshu further teaches a plurality of power levels are associated with at least one message type (e.g., paging signal 32) and the communication device sets its power level (e.g., normal or higher). *Id.* at 3–4 (citing Chennakeshu 4:29–37, 7:57–63, Fig. 4A). Chennakeshu even further teaches the communication device transmits the message in the control channel using the determined power level. *Id.* at 4 (citing Chennakeshu 6:12–20, 8:6–29, Fig. 3). However, the Examiner determines Chennakeshu does not disclose setting different power levels for different message types carried in the control

⁴ Claims 22, 27–30, 35–37, and 41 are argued as a group. App. Br. 7–10. We select claim 22 as representative. 37 C.F.R. § 41.37(c)(1)(iv).

channel, turning to Kayama. *Id.* (citing Kayama ¶¶ 82–83, 89–91, 94, Figs. 1B, 2).

Appellants argue Kayama teaches a base station controlling the transmission power of a mobile station but does not teach controlling the transmission power of its own messages at different power levels for different message types. App. Br. 7–8. Specifically, Appellants assert the cited passages in Kayama teach the base station setting or controlling the transmission level for messages sent by the mobile stations, not the transmission level for messages sent by the base station. *Id.* at 8–9 (citing Kayama ¶¶ 89, 90, 94, 112); *see* Reply Br. 3–4. Presuming that the mobile station is “the transmitting device,” Appellants also contend the mobile station does not set the different power levels for the different types of message but varies the power level for a single message type. *Id.* at 8; Reply Br. 4. Appellants further argue Kayama does not indicate the power level of a message to be transmitted based on a determined message type and does not determine transmission power levels for various control signal types. *Id.* at 9–10 (citing Kayama ¶¶ 88–89, 93).

ISSUES

Under § 103, has the Examiner erred in rejecting claim 22 by finding Chennakeshu and Kayama collectively would have taught or suggested:

(1) “the communication device determining a power level, based on the determined type of the message, for transmission of the message using the control channel, wherein said determining the power level comprises setting different power levels for different types of messages carried in the control channel” and

(2) “the communication device transmitting the message in the control channel using the determined power level”?

ANALYSIS

Based on the record before us, we find no error in the Examiner’s rejection of claim 22. Notably, this claim does not recite a base station or a mobile device. Rather the claim recites “a communication device,” and this same device (1) “determin[es] a power level, based on the determined type of the message, for transmission of the message,” (2) “set[s] the power level for transmission of the message based on said determining,” and (3) “transmit[s] the message in the control channel using the determined power level.” App. Br. 14 (Claims App’x). As such, whether a base station or a mobile device performs the recited steps in claim 22 is of no import. *See* App. Br. 7–9. However, the same communication device (e.g., the base station or a mobile device) in claim 22 performs its recited steps.

Turning to the arguments presented, Appellants focus on Kayama. App. Br. 7–10. Yet, the rejection is based on *both* Chennakeshu and Kayama and relies on Chennakeshu to teach most of the disputed limitations. Final Act. 3–4. For example, the rejection relies on Chennakeshu—not Kayama—to teach (1) a communication device (e.g., network control center 18) determines a power level (e.g., power level indicator 36) for transmission (e.g., paging signal 32) based on the determined message type (e.g., paging signal type) (Final Act. 3 (citing Chennakeshu 7:28–33, Fig. 2)), (2) a plurality of specific power levels are associated with at least one type of message (e.g., two power levels (normal power and a higher power) for paging signal 32) (*id.* at 3 (citing

Chennakeshu 4:29–37, 7:57–62)), and (3) the communication device (e.g., network control center 18) sets the transmission power level and transmits a message (e.g., paging signal 32) in the control channel using the determined power level (e.g., normal level) (*id.* at 4 (citing Chennakeshu 6:12–20, 7:57–63, 8:6–29, Fig. 3); *see also* Chennakeshu 4:31–33, 7:28–30). These findings related to Chennakeshu are undisputed in the record.

Because Chennakeshu teaches the same communication device (e.g., network control center 18) performing all these steps, including determining the power level (e.g., controlling the transmission power) of its own message based on the message type (*see* Chennakeshu 6:12–15, 7:28–36, 57–63, 8:6–11, Figs. 2–3), we find the arguments asserting Kayama fails to teach these features (*see* App. Br. 7–9; Reply Br. 3–4) unavailing.

Additionally, Chennakeshu teaches “a plurality of specific power levels are associated with at least one type of message” (e.g., normal or higher power level for paging signal 32) as recited. Final Act. 3 (citing Chennakeshu 4:29–37, 7:57–62). As such, Chennakeshu teaches setting different power levels to a specific message type (e.g., paging signal 32). However, as the Examiner states, Chennakeshu does not teach “said determining the power level comprises setting different power levels for different types of messages carried in the control channel,” turning to Kayama. Final Act. 4. As such, Kayama is cited for a limited purpose in the rejection—to teach it is known in the art to assign or set *different power levels for different message types*—and not to teach a specific “communication device” sets a power level or transmits the recited “message.” *See id.* (citing Kayama ¶¶ 82–83, 89–91, and 94).

Kayama, for example, teaches it was known to transmit various signals along a channel to a terminal's receiver and determining the transmission power levels for these various signal types based on transmission method determiner 136. Kayama ¶ 82, *cited in* Final Act. 4. Thus, Kayama teaches one skilled in the art to set different power levels for message types. *See id.* Kayama further teaches transmission method determiner 136 determines the transmission power level for a message type (e.g., a preamble or reservation signal) based on the received intensity of specific signals (e.g., a preamble or reservation signal respectively). *Id.* ¶¶ 90, 92. As such, Kayama teaches and suggests that it is known to determine a transmission power level for a message “based on the determined type of message” and to set “different power levels for different types of messages” as recited. *See id.* ¶¶ 82, 92.

To be sure, Kayama teaches the determined transmission power level relates to setting the power level for a message transmitted from the mobile station to the base station. *See id.* ¶¶ 88–90; *see also* App. Br. 7–9.⁵ Yet we fail to see why Kayama's teaching of determining different power levels for different message types cannot apply to Chennakeshu's transmission from its communication device (e.g., network control center 18), which already teaches transmitting a signal at two different levels, as the rejection proposes. *See* Final Act. 4 (stating “it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the

⁵ To the extent the Examiner asserts packet data and its transmitted power level are transmitted from a base station (Ans. 3 (citing Kayama ¶ 91)), Kayama discusses and shows packet data transmitted on shared, uplink packet channel 24, 34 from the mobile device. *See* Kayama ¶¶ 109, 119, Figs. 2–3. *See also* Reply Br. 4.

teaching of Kayama as mentioned above as a modification to Chennakeshu, such that the combination would allow [f]o[r] determin[ing] transmission [] power levels of the various types of signals”).

Moreover, Kayama further teaches a base station transmits various control signals, including an acknowledgement signal, a synchronizing signal, and an allocation signal based on the determination of transmission method determiner 136. Kayama ¶ 94, *cited in* Final Act. 4. When combined with Chennakeshu, the proposed combination would predictably result in a communication device that transmits various message types (e.g., paging, acknowledging, and synchronizing signals) and setting different power levels to each message types based on the determined message type as recited.

When viewed from this perspective, we agree that Chennakeshu in combination with Kayama teaches “the communication device determining a power level, based on the determined type of message using the control channel, wherein said determining the power level comprises setting different power levels for different types of messages carried in the control channel” and “the communication device transmitting the message in the control channel using the determined power level” as recited.

For the foregoing reasons, Appellants have not persuaded us of error in the rejection of independent claim 22 and claims 27–30, 35–37, and 41, which are not separately argued.

Claims 26, 34, and 40

Claims 26, 34, and 40 depend from claims 22, 30, and 37 respectively and are argued as a group. App. Br. 11–12. We select claim 26 as representative. 37 C.F.R. § 41.37(c)(1)(iv). Claim 26 recites “said

determining the type of message comprises an acknowledgement message, wherein said determining the power level is based on the message being an acknowledgement message.” App. Br. 15 (Claims App’x). The Examiner concludes “Chennakeshu as modified by Kayama” teaches the features of claim 22 and Kayama teaches that transmitting acknowledgement messages from a base station as recited in claim 26 is known. Final Act. 5 (citing Kayama ¶¶ 88–89, 94).

Appellants repeat that Kayama does not (1) set the transmission power levels for, but rather by, a base station and (2) discuss transmission power levels being set based on message type. App. Br. 12. We disagree for reasons previously stated. Additionally, we agree with the Examiner Kayama teaches sending acknowledgement messages from a base station is known. Kayama ¶ 94, *cited in* Final Act. 5 and Ans. 3. When combining this specific teaching with the others discussed above, the combination of Chennakeshu and Kayama would predictably yield what is recited in claim 26.

For the foregoing reasons, Appellants have not persuaded us of error in the rejection of claim 26 and claims 34 and 40, which are not separately argued.

THE REMAINING REJECTION

Claims 25 and 33 are rejected under 35 U.S.C. § 103(a) based on Chennakeshu, Kayama, and Larghi. Final Act. 6–7. No separate arguments have been presented for this rejection. *See generally* App. Br. 7–12. We sustain this rejection for the above-stated reasons. Accordingly, Appellants have not persuaded us of error in the rejection of claims 25 and 33.

DECISION

We affirm the Examiner's rejection of claims 22, 25–30, 33–37, 40, and 41 under § 103.

The rejection of claims 23, 24, 31, 32, 38, and 39 has been withdrawn. We presume these claims stand objected to due to their dependency on rejected base claims but would be allowable if rewritten in independent form to include all the limitations of their respective base claims and any intervening claims.

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