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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEVE BARRETT[1]

Appeal 2017-010510
Application 14/007,191
Technology Center 2400

Before ST. JOHN COURTENAY III, LARRY J. HUME, and NORMAN H. BEAMER, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Non-Final Rejection of claims 1, 3, 4, 6–9, 11–13, 15, 16, and 18–20. Appellant has canceled claims 2, 10, and 17. The Examiner has indicated that claims 5 and 14 are objected to but would be allowable if rewritten in independent form. Non-Final Act. 17. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] According to Appellant, the real party in interest is NVIDIA Corporation. App. Br. 3.

STATEMENT OF THE CASE[2]

The Invention

Appellant's disclosed embodiments and claimed invention relate to a Multimedia Broadcast Multicast Service (MBMS) transmission cooperative with relay. *See* Title. In particular, the invention "relates to mobile communications networks which are arranged to communicate data to and from mobile communications devices via a wireless access interface," and also "to mobile communications devices which communicate data with mobile radio networks, relay nodes for mobile communications networks and methods for communicating data with mobile radio networks." Spec. 1, ll. 1–9.

Exemplary Claims

Claims 1, 9, and 15, reproduced below (*see* Claims App'x), are representative of the subject matter on appeal (formatting added for readability; *emphases* added to contested prior-art limitations):

> 1. A mobile communications network for communicating broadcast data to a plurality of mobile communications devices by transmitting the broadcast data via a wireless access interface, the mobile communications network including
>
> a plurality of base stations disposed throughout the network and arranged in operation to transmit signals to mobile communications devices attached to the base stations, and

[2] Our decision relies upon Appellant's Appeal Brief ("App. Br.," filed Mar. 27, 2017); Reply Brief ("Reply Br.," filed Aug. 2, 2017); Examiner's Answer ("Ans.," mailed June 2, 2017); Non-Final Office Action ("Non-Final Act.," mailed Oct. 26, 2016); and the original Specification ("Spec.," filed Sept. 24, 2013).

a relay node arranged in operation to receive a first signal representing the broadcast data transmitted by one or more of the base stations and to retransmit the broadcast data as a second signal,

the first signal being broadcast for reception by a first mobile communications device and the relay node and the second signal being broadcast for reception by a second mobile communications device,

wherein the first signal is transmitted on a first channel of the wireless access interface in only a first time slot within a first frequency band, and the second signal is transmitted in a second channel of the wireless access interface in a second time slot being after the first time slot and within a second frequency band, and

one or more of the base stations is arranged to communicate data to a third mobile communications device in the second channel contemporaneously with the transmission of the broadcast data on the second channel by the relay node.

9. A mobile communications device for receiving broadcast data from a mobile radio network, the mobile radio network including a plurality of base stations disposed throughout the mobile radio network and arranged in operation to transmit a first signal representing the broadcast data to mobile communications devices attached to the base stations via a wireless access interface, and a relay node is arranged to receive the first signal representing the broadcast data transmitted by the base station and to retransmit the broadcast data as a second signal, the mobile communications device comprising:

a receiver which is arranged in operation:

to receive the broadcast data as the first signal from one or more of the base stations, and

to receive the broadcast data as the second signal from the relay node,

wherein the first signal is received from a first channel in only a first time slot within a first

frequency band and the second signal is received from a second channel of the wireless access interface in a second time slot being after the first time slot in a second frequency band, and

the receiver is arranged to combine the first and the second signals to recover the broadcast data.

15. A method of communicating broadcast data to a mobile communications device *by transmitting the broadcast data via a wireless access interface of a mobile communications network*, the mobile communications network including *a plurality of base stations disposed throughout the network and arranged in operation to transmit signals to and receive signals from mobile communications devices attached to the base stations via the wireless access interface*, and one or more relay nodes arranged to receive a first signal representing the broadcast data from by one of the base stations, and to retransmit the broadcast data as a second signal, the method comprising:

receiving the broadcast data as the first signal from one or more of the base stations only in a first time slot within a first frequency band, and/or

receiving the broadcast data as the second signal from a relay node in a second time slot after the first time slot within a second frequency band,

wherein the first signal is received on a first channel and/or the second signal is received on a second channel of the wireless access interface,

wherein the first signal is transmitted on the first channel, and the second signal is transmitted in the second channel.

Prior Art

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Osseiran et al. ("Osseiran")	US 2006/0280114 A1	Dec. 14, 2006
Cai et al. ("Cai")	US 2010/0150177 A1[3]	June 17, 2010
Bertrand et al. ("Bertrand")	US 2010/0272006 A1	Oct. 28, 2010
Khandekar et al. ("Khandekar")	US 2011/0249611 A1	Oct. 13, 2011
Wei et al. ("Wei")	US 2012/0155361 A1	June 21, 2012

Rejections on Appeal

R1. Claims 1, 3, 6–9, 11, 15, 16, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wei, Khandekar, and Bertrand. Non-Final Act. 4.

R2. Claims 4, 13, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wei, Khandekar, Bertrand, and Cai. Non-Final Act. 15.

R3. Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wei, Khandekar, Bertrand, and Osseiran. Non-Final Act. 16.

CLAIM GROUPING

Based on Appellant's arguments (App. Br. 8–14) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of obviousness

[3] We note a typographical error in the explicit statement of the rejection in which Cai et al. is incorrectly referenced as "US 2010/0150***11***7 A1" instead of "US 2010/0150***17*** A1." *See* Non-Final Act. 15 (emphasis added). We view this as harmless error.

Rejection R1 of claims 1, 3, 6–8, and 19 on the basis of representative claim 1; we decide the appeal of obviousness Rejection R1 of claims 9 and 11 on the basis of representative claim 9; and we decide the appeal of obviousness Rejection R1 of claims 15, 16, and 18 on the basis of representative claim 15.

Remaining claims 4, 12, 13, and 20 in Rejections R2 and R3, not argued separately, stand or fall with the respective independent claim from which they depend.[4]

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellant's arguments with respect to claims 1, 3, 4, 6–9, 11–13, 15, 16, and 18–20 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments. We highlight and address specific

[4] "Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellant does not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

findings and arguments regarding claims 1, 9, and 15 for emphases as follows.

PRINCIPLES OF LAW

During prosecution, claims must be given their broadest reasonable interpretation when reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under this standard, we interpret claim terms using "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

The test for obviousness is what the combined teachings of the prior art would have suggested to the hypothetical person of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

1. § 103(a) Rejection R1 of Claims 1, 3, 6–8, and 19

Issue 1

Appellant argues (App. Br. 8–10; Reply Br. 2–4) the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious over the combination of Wei, Khandekar, and Bertrand is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests a mobile communications network wherein, *inter alia*, "one or more of the base stations is arranged to communicate data to a third mobile

communications device in the second channel contemporaneously with the transmission of the broadcast data on the second channel by the relay node," as recited in claim 1?

Analysis

The Examiner finds Khandekar teaches or suggests the contested limitation of claim 1, i.e., "one or more of the base stations is arranged to communicate data to a third mobile communications device in the second channel contemporaneously with the transmission of the broadcast data on the second channel by the relay node." Non-Final Act. 6–7 (citing Khandekar ¶¶ 34–35, 72–73, 84; Figs. 2, 9 (subframe 2)).

Appellant argues:

> [T]hese portions of Khandekar, relied upon by the Office Action as noted above, disclose arranging for a base station to communicate to three relays. However, as noted above, pending *Claims 1 and 8 require that the communication from the base station is to a "third mobile communications device" not a relay*. Khandekar clearly differentiates its relays 120m from its UEs 130n. As such, Khandekar does not include the elements the Office Action purports it does.

App. Br. 9 (emphasis added). Thus, Appellant appears to base their argument primarily on whether or not Khandekar's teaching of communication between a base station and a relay meets the disputed claim limitation of communication between a base station and a third mobile communications device.

In response, the Examiner clarifies his finding by stating:

> Khandekar discloses a wireless communication network including multiple eNBs, which are base stations, relays, and UEs, which are mobile communications devices (See page 2

> paragraph 30 and Figure 1 of Khandekar). Khandekar also discloses a macro eNB 110 communicating with a relay 120a via a backhaul uplink and a backhaul downlink, the relay communicating with a UE 130a via an access uplink and an access downlink, and *the eNB 110 communicating with a different UE 130g via a WAN uplink and a WAN downlink* (See page 2 paragraphs 34–35 and Figure 2 of Khandekar). *Thus, it is clear that Khandekar does disclose communication between a base station (i.e. Macro eNB 110) and a "third mobile communications device" (i.e. UE 130g),* as claimed.

Ans. 2–3 (emphasis added). Figures 1 and 2 of Khandekar are provided below for reference.

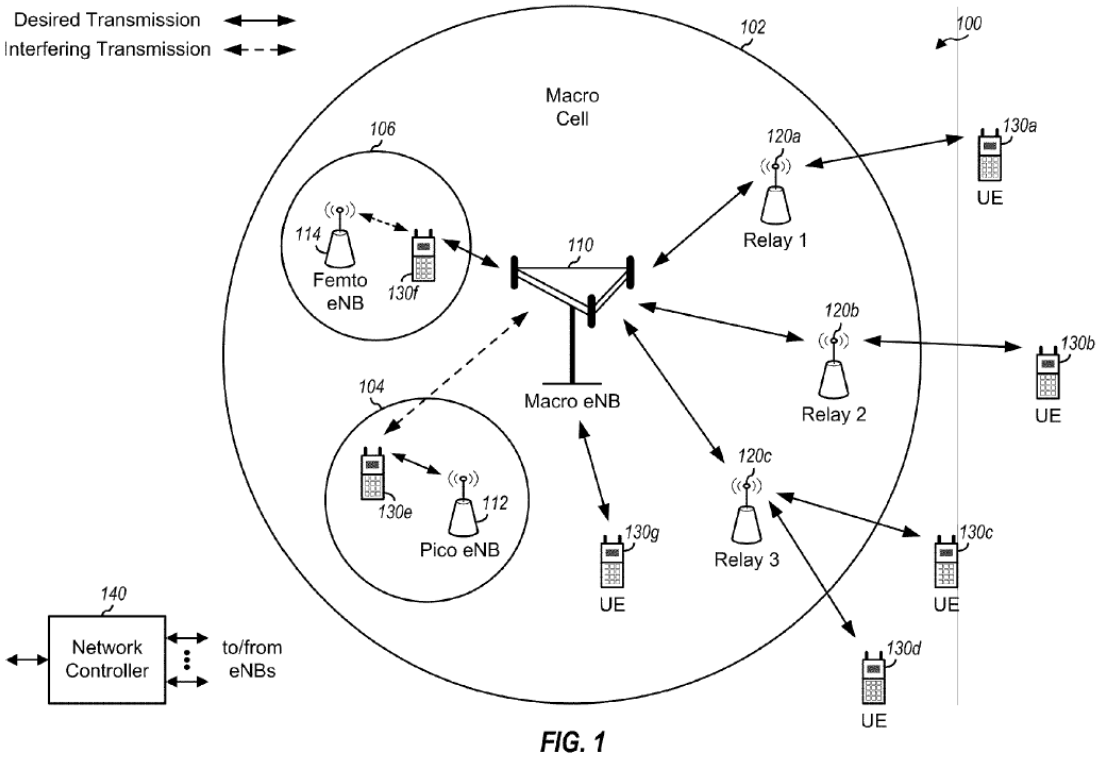

FIG. 1

"FIG. 1 shows a wireless communication network 100, which may be an LTE network or some other wireless network. Wireless network 100 may include a number of evolved Node Bs (eNBs), relays, and other network entities that can support communication for a number of UEs. An eNB may

be an entity that communicates with the UEs and may also be referred to as a base station, a Node B, an access point, etc." Khandekar ¶ 30.

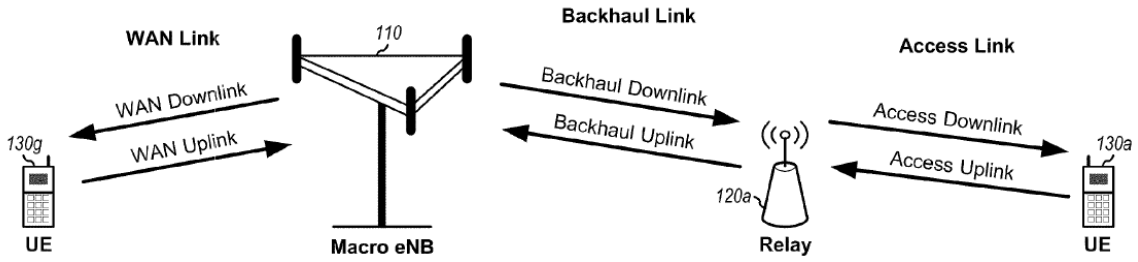

FIG. 2

"FIG. 2 shows communication between macro eNB 110 and UE 130a via relay 120a. . . . FIG. 2 also shows direct communication between macro eNB 110 and a UE 130g. eNB 110 may send downlink transmission to UE 130g via a wide area network (WAN) downlink and may receive uplink transmission from UE 130g via a WAN uplink." Khandekar ¶¶ 34–35.

Thus, we agree with the Examiner's finding Khandekar teaches or suggests "one or more of the base stations is arranged to communicate data to a third mobile communications device," as recited in claim 1. Ans. 3.

As for the recited *timing* of this disclosed communication between the base station and the third mobile communications device, i.e., "*contemporaneously with* the transmission of the broadcast data on the second channel by the relay node" (emphasis added), the Examiner finds that Khandekar, in paragraphs 72, 73, and 84, and Figure 9, teaches or at least suggests a "reference to[,] during the transmission of MBSFN subframes by a relay node (i.e. during subframe 2 of Figure 9), also performing transmissions in the same subframe by an eNB to UEs." Non-Final Act. 7 (emphasis omitted). This suggestion of *contemporaneous* transmission is further supported by Khandekar which teaches "[e]ach

reserved subframe may have reduced transmit power (e.g., low or no transmit power) from the base station in order to reduce interference to the at least one UE communicating with the first relay." Khandekar ¶ 84.

We note Appellant did not rebut the Examiner's finding in this regard in the Appeal Brief. However, Appellant belatedly argues this point regarding transmission timing in the Reply Brief:

> Appellant does not disagree that the cited portions of Khandekar teach communicating data to a third mobile communications device as the Examiner's Answer asserts. However, as noted above, pending Claims 1 and 8 are specific in requiring that *the communication from the claimed base station to the claimed third mobile communications device must occur at the same time the relay node broadcasts data* on the second channel.

Reply Br. 3 (emphasis added).

Arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to a shift in the Examiner's rejection raised in the Examiner's Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellant has not shown.

Even assuming, *arguendo*, our reviewing court were to find this argument timely, we are not persuaded because Appellant's argument is not commensurate with the scope of the claim. Specifically, we conclude the broadest reasonable interpretation of "contemporaneously" does not require simultaneity, i.e., occurring at the same time, as argued by Appellant.[5]

[5] During *ex parte* prosecution, claims must be interpreted as broadly as their terms reasonably allow since Applicant has the power during the administrative process to amend the claims to avoid the prior art. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

Moreover, Appellant fails to cite a more narrow definition of "contemporaneously" in the Specification that supports its contention.[6]

For these reasons, on this record, we are not persuaded the Examiner erred in rejecting claim 1, and grouped claims 3, 6–8, and 19 which fall therewith. *See* Claim Grouping, *supra*.

2. § 103(a) Rejection R1 of Claims 9 and 11

Issue 2

Appellant argues (App. Br. 10–12; Reply Br. 4–6) the Examiner's rejection of claim 9 under 35 U.S.C. § 103(a) as being obvious over the combination of Wei, Khandehar, and Bertrand is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests a mobile communications device that includes, *inter alia*, "a receiver which is arranged . . . to receive the broadcast data as the first signal from one or more of the base stations, and to receive the broadcast data as the second signal from the relay node," wherein "the first signal is received from a first channel in only a first time slot within a first frequency band and the second signal is received from a second channel of the wireless access

[6] *See generally* Spec. Any special meaning assigned to a term "must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention." *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998); *see also Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008) ("A patentee may act as its own lexicographer and assign to a term a unique definition that is different from its ordinary and customary meaning; however, a patentee must clearly express that intent in the written description.").

interface in a second time slot being after the first time slot in a second frequency band," as recited in claim 9?

Analysis

The Examiner finds "Wei et al. does not specifically disclose the first and second signals being transmitted in different first and second frequency bands" (Non-Final Act. 10), but instead finds Bertrand teaches or suggests "the first signal is received from a first channel in only a first time slot within a first frequency band and the second signal is received from a second channel of the wireless access interface in a second time slot," referring to Bertrand at paragraph 28 as teaching "an eNB and a RN using different frequency bands." *Id*. (emphasis omitted).

In response, Appellant contends:

> Wei's UE2 and UE3 receive both first (P_1) and second (P_2) signals in a same time slot. However, pending Claim 9 recites that "wherein the first signal is received . . . only in a first time slot" and "the second signal is received . . . in a second time slot being after the first time slot. . ." While this embodiment of Wei may teach that a first signal is received in a first time slot and a second signal is received in a second time slot, this embodiment does not teach that the first signal is received "only in a first time slot" since P_1 is received by UE2 and UE3 in both a first and second time slot as established above. Therefore, the cited portions of Wei, as applied by the Office Action, do not include this element of pending Claim 9. Neither the cited portions of Khandekar nor Bertrand have been cited to teach this element.

App. Br. 11.

In response to Appellant's argument concerning "only in a first time slot" quoted above, the Examiner finds "[t]he rejection is based on the second exemplary embodiment of Wei with signal timing of the second

embodiment being illustrated in Figure 4B of Wei, not Figure 5B, as argued by the applicant" (Ans. 5), and further finds:

> This second phase of transmission includes the UE3 using link (3) to receive a broadcast transmission from the relay node. Both phases of transmission for the second embodiment are illustrated in Figure 4B of Wei wherein, during the first time period T1 links (1), (2), and (4) are transmitted, and during the second time period T2 links (3) and (5) are transmitted. It is noted that in this embodiment of Wei, UE 3 only receives data from the base station using link (4) during the first time period and does not receive data from the base station during the second time period. Thus, in this second embodiment of Wei, the first signal is received by UE3 over link (4) only during the first time slot, as claimed. Therefore, Wei does disclose an embodiment wherein the claimed first signal being received from a first channel in "only a first time slot". Further this second embodiment of Wei also allows UEs to overhear transmissions, such that the same data may be heard from the base station and relay node at different times such that the overheard data may be combined to recover the broadcast data (See pages 2-3 paragraphs 39-41 of Wei). Since Wei does disclose embodiments teaching the claimed signal being received from a first channel in "only a first time slot", and since the Applicant's arguments are directed towards a different embodiment, it is believed that these arguments are moot.

Ans. 5–6.

We agree with the Examiner's finding that the combination of Wei, Khandekar, and Bertrand teaches or suggests the contested limitation of claim 9. We agree with the Examiner because Appellant's arguments are not responsive to the detailed rejection as articulated by the Examiner.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitation of claim 9, nor do we

find error in the Examiner's resulting legal conclusion of obviousness. Therefore, we sustain the Examiner's obviousness rejection of independent claim 9, and grouped claim 11 which falls therewith. *See* Claim Grouping, *supra*.

3. § 103(a) Rejection R1 of Claims 15, 16, and 18

Issue 3

Appellant argues (App. Br. 12–13; Reply Br. 6–8) the Examiner's rejection of claim 15 under 35 U.S.C. § 103(a) as being obvious over the combination of Wei, Khandekar, and Bertrand is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests "[a] method of communicating broadcast data to a mobile communications device by transmitting the broadcast data via a wireless access interface of a mobile communications network" that includes, *inter alia*, the steps of "receiving the broadcast data as the first signal," and "receiving the broadcast data as the second signal," "wherein the first signal is received on a first channel and/or the second signal is received on a second channel of the wireless access interface," as recited in claim 15?

Analysis

The Examiner makes similar findings with respect to independent claim 15 as with independent claim 9 in *Issue 2*, *supra*, and Appellant makes limited arguments concerning independent claim 15. *See* App. Br. 12–13. In particular, Appellant argues claim 16 recites a "wireless . . . technology" as being used in the claimed mobile communications network, and should thus be interpreted as "a singular wireless access technology." App. Br. 12.

In response, the Examiner finds, and we agree, "[t]here is no limitation in these claims citing any 'wireless access technology' as argued. Although the claims do disclose use of a 'wireless access interface', there is no limitation regarding any specific technology used by the interface nor any limitation that requires only a single technology to be used by the interface. Thus, Applicant's arguments are moot since they are not directed at the current limitations of these claims." Ans. 7. We agree with the Examiner because the claim does not limit the wireless technology to a particular type, as asserted by Appellant.

The Examiner makes further findings regarding the teachings and suggestions of Bertrand, which we adopt as our own and incorporate herein by reference. *See* Ans. 7–8.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitation of claim 15, nor do we find error in the Examiner's resulting legal conclusion of obviousness. Therefore, we sustain the Examiner's obviousness rejection of independent claim 15, and grouped claims 16 and 18 which fall therewith. *See* Claim Grouping, *supra*.

4. Rejections R2 and R3 of Claims 4, 12, 13, and 20

In view of the lack of any substantive or separate arguments directed to obviousness Rejections R2 and R3 of claims 4, 12, 13, and 20 under

§ 103(a) (*see* App. Br. 13–14), we sustain the Examiner's rejection of these claims. Arguments not made are waived.[7]

REPLY BRIEF

To the extent Appellant may advance new arguments in the Reply Brief (Reply Br. 2–8) not in response to a shift in the Examiner's position in the Answer, arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the Examiner's Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellant has not shown.

CONCLUSION

The Examiner did not err with respect to obviousness Rejections R1 through R3 of claims 1, 3, 4, 6–9, 11–13, 15, 16, and 18–20 under 35 U.S.C. § 103(a) over the cited prior art combinations of record, and we sustain the rejections.

[7] With respect to Rejection R2, Appellant merely argues, "the cited portions of Wei, Khandekar, and Bertrand in combination with the cited portions of Cai do not provide a *prima facie* case of obviousness for pending Claims 1 and 9 and claims that depend thereon. For at least this reason, the § 103(a) rejection of Claims 4, 13, and 20 should be overturned and the claims set to issue." App. Br. 13. Appellant makes similar arguments for Rejection R3 of claim 12. *See* Ans. 13–14.

DECISION

We affirm the Examiner's decision rejecting claims 1, 3, 4, 6–9, 11–13, 15, 16, and 18–20.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED