UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JARKO NIEMENMAA

Appeal 2007-4435
Application 10/429,947
Technology Center 2600

Decided: May 13, 2008

Before MAHSHID D. SAADAT, JOHN A. JEFFERY, and CARLA M. KRIVAK, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 from the Examiner's rejection of claims 1, 2, 4-21, and 23. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Appellant invented a method of locating user equipment that is able to communicate over at least two channels. In one implementation, when the user equipment is handed over to communicate on a different channel, the determination of the location of the user equipment continues until the handover is completed. Moreover, the system enables completion of such a location determination despite an unsuccessful handover. Such a system is more efficient since, among other things, it avoids the need to restart location procedures when handovers are unsuccessful.[1] Claim 1 is illustrative:

1. A method of locating user equipment that is able to communicate over at least a first and a second channel, the method comprising:

requesting a location of user equipment which is communicating on a first channel;

initiating a determination of the location of the user equipment; and

handing over the user equipment to communicate on a second channel,

wherein said determination of the location of the user equipment on the first channel continues until said handing over has been completed, and

wherein when said handing over is unsuccessful the determination of the location of the user equipment communicating on the first channel is completed.

The Examiner relies on the following prior art references to show unpatentability:

[1] *See generally* Spec. ¶¶0015-0022; 0044.

Zadeh	US 6,047,182	Apr. 4, 2000
Fischer	US 6,295,455 B1	Sep. 25, 2001
Vaara	US 6,400,951 B1	Jun. 4, 2002

1. Claims 1, 2, 4-6, 10-12, 16, 17, 20, 21, and 23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fischer and Zadeh.
2. Claims 7-9, 13-15, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fischer, Zadeh, and Vaara.

Rather than repeat the arguments of Appellant or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellant. Arguments which Appellant could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

The Obviousness Rejection Over Fischer and Zadeh

We first consider the Examiner's rejection of claims 1, 2, 4-6, 10-12, 16, 17, 20, 21, and 23 under 35 U.S.C. § 103(a) as unpatentable over Fischer and Zadeh. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Discussing the question of obviousness of a patent that claims a combination of known elements, the Court in *KSR Int'l v. Teleflex, Inc*., 127 S. Ct. 1727 (2007) explains:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [*v. AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock*[*, Inc. v. Pavement Salvage Co*., 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that "there was an apparent reason to combine the known elements in the fashion claimed." *Id.* at 1740-41. Such a showing requires "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id*. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

If the Examiner's burden is met, the burden then shifts to the Appellant to overcome the prima facie case with argument and/or evidence.

Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Independent Claim 1

The Examiner's rejection essentially finds that Fischer teaches a method of locating user equipment with every claimed feature except for completing the location determination when handing over is unsuccessful. The Examiner cites Zadeh as teaching such a feature and concludes that the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention in view of these collective teachings (Ans. 3-10).

Appellant argues that the combination of Fischer and Zadeh is improper and unmotivated hindsight reconstruction since the only basis for combining these references is found in Appellant's application, and not the prior art. In this regard, Appellant emphasizes that the cited references are non-analogous as they pertain to different kinds of handovers: *communication* handovers in Fischer, and *positioning* handovers in Zadeh (App. Br. 9-14; Reply Br. 3-6, 14-16).

Appellant further argues that even if it were proper to combine the references, the combination would still not disclose or suggest the last limitation of claim 1 calling for completing the location determination of the user equipment when handing over is unsuccessful. According to Appellant, Zadeh does not remedy the deficiencies of Fischer, and indeed teaches a result contrary to that called for in the disputed limitation. That is, Appellant emphasizes that Zadeh teaches that when a positioning handover is unsuccessful, the location determination *cannot* be completed since such

positioning handovers are *absolutely essential* in acquiring the requisite positioning data from three separate base station transceivers that is needed to determine the user equipment's location (App. Br. 14-15; emphasis added).

The Examiner contends that the term "completed" recited in the claim merely means "having come to an end." With this construction, the Examiner argues that the limitation does not preclude Zadeh's process detailed in the flow chart of Figure 3B that "completes" the location determination if the handover is unsuccessful. That is, the Examiner takes the position that the steps shown on the left side of this flow chart correspond to (1) an unsuccessful handover (i.e., the respective "no" prongs of steps 350, 360, 370), and (2) "completing" the location determination (i.e., no positioning data obtained (step 375)) (Ans. 18-19).

Appellant, however, disputes the Examiner's interpretation of the term "completed." Appellant argues that ordinarily skilled artisans would instead interpret the term "completed" in light of the Specification to mean "to make whole or perfect," "carry out successfully," or to be "brought into a perfected state." (Reply Br. 10-12). With this construction, Appellant argues that ordinarily skilled artisans would therefore interpret claim 1 to require bringing the location determination *to perfection* even when the handing over is unsuccessful. Put another way, Appellant contends that this interpretation of claim 1 requires actually *carrying out* the location determination when handing over is unsuccessful -- a determination that ultimately results in a valid location estimate even under this unsuccessful handover condition (Reply Br. 11).

The issues before us, then, are (1) whether the Fischer and Zadeh references would have been reasonably combinable, and (2) whether the collective teachings of the references teach or suggest the disputed limitation of claim 1, namely completing the location determination of the user equipment when handing over is unsuccessful. For the following reasons, we answer "yes" to both of these questions. However, the answer to the first question is not dispositive to our decision since we find the Fischer reference itself amply suggests all limitations of claim 1.

Fischer discloses a method for locating a mobile station (MS) 12 that operates in a mobile telecommunications network. To this end, the MS's geographical location is determined via position measuring data that is transmitted from the MS to various location measurement units (LMUs) 15a-k associated with base transceiver stations (BTSs) 14a-n (Fischer, col. 5, l. 35 - col. 6, l. 26; col. 7, l. 39 - col. 8, l. 30; Figs. 1, 2).

Significantly, positioning data in Fischer can be transmitted during or following a handover operation. For example, when MS 12 receives a handover request before the transmission of the position measuring data has been completed, MS 12 continues to transmit the position measuring data over the previously used channel, until completed or the network releases it (Fischer, col. 14, ll. 54-61).

In one implementation, a flag or indicator instructs MS 12 to perform three distinct operations. These instructions and corresponding operations are described in column 14, line 62 through column 15, line 5 of Fischer and summarized below for clarity:

Instruction	Operation
"Continue"	Continue transmitting positioning data over the previously used channel even though the call has moved to a new channel
"Stop"	(1) Stop the transmission of positioning data, and (2) Perform the handover as ordered
"Wait"	Postpone the handover until such time as the transmission of the positioning data is completed

Table 1: Summary of Instructions to MS for Handovers in Fischer

It is the third instruction ("Wait") that is most relevant to the disputed limitation of claim 1. As noted above, this instruction (1) *postpones* the handover, and (2) *completes* the transmission of positioning data under this condition.

In our view, a postponed handover is, at least temporarily, "unsuccessful." That is, until the handover actually occurs, the handover is "unsuccessful" at least with respect to the successful completion of that handover.

Even if we assume, without deciding, that the postponed handover in Fischer would eventually be successfully executed after the transmission of the positioning data is completed, the handover is nonetheless

"unsuccessful" at least at the time when the transmission of the positioning data is completed. Moreover, since completing the transmission of the positioning data is essential in determining the MS's location in Fischer, the reference therefore would at least suggest to ordinarily skilled artisans that such location determination could likewise be completed during this time period (i.e., when the handover is postponed).

Therefore, we find that Fischer alone amply suggests all limitations of claim 1 and the teachings of Zadeh merely cumulative to those of Fischer. That said, however, we address several key issues regarding the Zadeh reference and its combinability with Fischer.

First, we agree with Appellant's construction (Reply Br. 10-11) of the term "completed" with respect to the recited location determination as requiring the location determination to be brought to perfection (as opposed to simply bringing the process to an end or aborting the process). In reaching this conclusion, however, we acknowledge that the Examiner must interpret the term "completed" with its broadest reasonable interpretation and not import limitations from the Specification into the claims.[2] Nevertheless, given the term's plain meaning interpreted in light of the Specification, we find Appellant's construction of "completed" more

[2] During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments...[C]laims may embrace different subject matter than is illustrated in the specific embodiments in the specification.") (citations and internal quotation marks omitted).

naturally aligns with the disclosure and is therefore the most reasonable construction on the record before us.[3]

Secondly, we disagree with Appellant that Zadeh's positioning handover is so different from Fischer's communication handover such that they are non-analogous. In our view, the teachings of Zadeh are reasonably related to Fischer in that Zadeh, like Fischer, determines the geographic location of a mobile station 200 on a mobile network including BTSs 210-230 associated with the mobile station. *See, e.g.*, Zadeh, col. 1, ll. 5-12; Abstract; col. 4, ll. 18-31; Fig. 2.

While the target BTS distinguishes Zadeh's "positioning" handover from an "ordinary" handover for purposes of calculating timing advance (TA) values, a positioning handover is nonetheless *identical* to an ordinary asynchronous handover (Zadeh, col. 2, l. 64 - col. 5, l. 9; emphasis added). Significantly, a positioning handover, like a communications handover, involves changing channels. *See* Zadeh, Abstract, col. 3, ll. 19-38; *see also* Fig. 3B.

Therefore, while we find the teachings of Zadeh to be reasonably combinable with Fischer, these teachings nevertheless do not teach or suggest *completing* the location determination when the handover is unsuccessful. We agree with the Examiner that the "no" prongs of Steps 350, 360, and 370 in Figure 3B of Zadeh reasonably correspond to an

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[3] *See Phillips*, 415 F.3d at 1316 ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.") (citations omitted); *see also Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F.3d 1343, 1348 (Fed. Cir. 2005) (internal citations omitted) (noting that reliance on dictionaries must accord with the intrinsic evidence: the claims, specification, and the prosecution history).

"unsuccessful" handover since the positioning handover is performed only if a channel is allocated (i.e., Steps 355 and 365 are performed via the "yes" prongs of Steps 350 and 360).

However, we agree with Appellant that Step 375 in Figure 3B of Zadeh (no positioning data) does not reasonably teach or suggest "completing" the location determination as this step simply falls short of bringing the location determination to perfection. Simply put, under the broadest reasonable interpretation of the term in light of the Specification, the location determination process is not "complete" until a successful determination is made. But in Zadeh, this process is actually *aborted* in Step 375 -- not completed -- when the handover is unsuccessful.

But even if Zadeh did teach successfully completing the location determination process for unsuccessful handovers, the reference's teachings would still be cumulative to those of Fischer for the reasons previously indicated. Therefore, since we find all limitations of independent claim 1 taught or suggested by the collective teachings of the cited prior art, we will sustain the Examiner's obviousness rejection of claim 1.[4]

Claim 2

We will also sustain the Examiner's rejection of claim 2. The Examiner refers to Columns 14 and 15 of Fischer as teaching the limitations of this claim (Ans. 19), and we agree. Referring again to Table 1, *supra*, of

[4] Although we sustain the Examiner's obviousness rejection based on the teachings of Fischer alone, we may nonetheless rely on fewer references than the Examiner in affirming a multiple-reference rejection under 35 U.S.C. § 103. *In re Bush*, 296 F.2d 491, 496 (CCPA 1961); *In re Boyer*, 363 F.2d 455, 458 n.2 (CCPA 1966).

this opinion which summarizes the instructions described in this passage from Fischer, we find the second instruction ("Stop") most relevant to this claim. As Fischer indicates, this instruction (1) stops the transmission of positioning data, and (2) performs the handover as ordered (Fischer, col. 15, ll. 1-3).

Step (1) above, in our view, reasonably corresponds to aborting the location determination as claimed. Likewise, Step (2) reasonably corresponds to completing the handover. While the order of these disclosed steps is inverted with respect to the steps recited in claim 2, the claim merely recites that "*when*…handing over is completed *then* the determination of the location of the user equipment is aborted" (emphasis added). To the extent that the terms "when" and "then" in claim 2 require that the recited steps be performed sequentially in the recited order or substantially simultaneously, we nonetheless see no patentable distinction in the execution of the corresponding steps of Fischer's "Stop" instruction which does not preclude a substantially simultaneous execution of these steps.[5]

Appellant's arguments with respect to Zadeh (App. Br. 16; Reply Br. 16-17) are unavailing and, in any event, are not germane to the Examiner's reliance on Fischer with respect to the limitations of this claim. Since we find that Fischer reasonably teaches or suggests the limitations of claim 2, we will sustain the Examiner's obviousness rejection of that claim.

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[5] With respect to the "Stop" instruction, Fischer does not say that the transmission of positioning data is stopped and *then* the handover is performed. *See* Fischer, col. 15, ll. 1-3. Rather, Fischer merely states that the instruction "'stop'[s] the transmission of positioning data and perform[s] the handover as ordered" (*Id.*) -- a sequence which does not preclude substantially simultaneous operations.

Claim 4

Although Appellant nominally argues the rejection of claim 4 separately, Appellant does not argue with sufficient particularity the limitations of the claim. Nor does Appellant provide any analysis or explanation as to why these particular limitations are patentable over the cited prior art, apart from merely asserting that the claim recites "additional features" not disclosed or suggested by the cited prior art (App. Br. 17). Such an argument, however, falls well short of persuasively rebutting the Examiner's prima facie case of obviousness, and we will therefore sustain the rejection of claim 4 for the same reasons discussed above with respect to claims 1 and 2.

Claim 5

We will also sustain the Examiner's rejection of claim 5. Appellant argues that the Examiner's proffered motivation to combine Zadeh with Fischer to arrive at the claimed invention (i.e., to provide a more efficient and fault tolerant system) is not supported by substantial evidence (App. Br. 17). We are unpersuaded by this argument since, as we noted previously, we find the teachings of Zadeh reasonably combinable with those of Fischer. Our discussion in that regard with respect to claim 1 applies equally here and we therefore incorporate that discussion here by reference.

Furthermore, the fact that the prior art does not explicitly state the Examiner's stated reason to combine the references is hardly dispositive. Indeed, the reason to combine references need not be expressly stated in the references, but "can take account of the inferences and creative steps that a

person of ordinary skill in the art would employ." *KSR*, 127 S. Ct. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

For the foregoing reasons, we find Appellant has not persuasively rebutted the Examiner's prima facie case of obviousness of claim 5 based on the collective teachings of the references (Ans. 6) -- a position that we find reasonable. The Examiner's rejection is therefore sustained.

Claims 6, 10-12, 16, 17, and 20

Although Appellant nominally argues the rejection of claims 6, 10-12, 16, 17, and 20 separately, Appellant does not argue with particularity the limitations of these claims. Nor does Appellant provide any analysis or explanation as to why these particular limitations are patentable over the cited prior art, apart from merely asserting that the claims recite subject matter not disclosed or suggested by the cited prior art (App. Br. 18-20). Such an argument, however, falls well short of persuasively rebutting the Examiner's prima facie case of obviousness, and we will therefore sustain the rejection of these claims for the same reasons discussed above.

Regarding claim 17, we add that we are also unpersuaded by Appellant's argument regarding the combinability of Zadeh and Fischer for the reasons previously discussed.

Claim 21

We will also sustain the Examiner's rejection of claim 21 essentially for the reasons previously indicated with respect to claim 2. Our previous discussion with respect to claim 2 applies equally here and we therefore incorporate that discussion by reference. Furthermore, Appellant's

arguments regarding the Examiner's purported reliance on a speculative power failure to allegedly teach certain features of claim 21 (App. Br. 21) are likewise unpersuasive since the Examiner's position regarding claim 21 (Ans. 21) relies solely on the same passage from Fischer as that relied upon for claim 2. The Examiner's rejection of claim 21 is therefore sustained.

Claim 23

Likewise, we will also sustain the Examiner's rejection of claim 23 essentially for the reasons previously indicated with respect to claim 2. While we find the Examiner's hypothetical power failure would ostensibly cause a resulting abortion of the location determination (Ans. 10) problematic essentially for the reasons indicated by Appellant,[6] we nonetheless find all limitations of claim 23 amply suggested by the cited prior art references for the reasons previously discussed. Accordingly, we will sustain the Examiner's rejection of claim 23.

The Obviousness Rejection Over Fischer, Zadeh, and Vaara

Regarding claims 7-9, 13-15, 18, and 19, the Examiner adds the disclosure of Vaara for teaching controlling the first and second channels by corresponding types of controllers and concludes such a limitation would have been obvious to ordinarily skilled artisans (Ans. 10-16).

Appellant does not dispute the Examiner's specific factual findings with respect to the disclosure of Vaara, but rather argues that the

[6] Although this argument was presented in connection with claim 21 (App. Br. 21), it actually applies to the Examiner's stated position with respect to claim 23 (Ans. 10).

combination of references is unmotivated, is based on impermissible hindsight reconstruction and that the Examiner failed to provide any evidence to support the alleged motivation to combine Vaara with the cited prior art (App. Br. 22-23). Appellant also argues that the addition of Vaara does not cure the previously-noted deficiencies of Fischer and Zadeh with respect to the recited limitations (App. Br. 23-28).

We will sustain the Examiner's rejection of claims 7-9, 13-15, 18, and 19. First, we note that the Examiner's factual findings with respect to the disclosure of Vaara (Ans. 10-16) are undisputed. Second, on the record before us, we find that ordinarily skilled artisans would have ample reason to combine the Vaara reference with the other references. Not only does Vaara pertain to a handover and call setup method in a mobile communications system (Vaara, Abstract), controlling different channels via respective controllers (e.g., base station controllers and mobile switching center as in Figure 1) would provide, among other things, diversity and redundancy in transmission. We see no reason why such a feature would not be applicable to the mobile communication system of Fischer and Zadeh, particularly since those references likewise utilize base station controllers and mobile switching centers. For the foregoing reasons, we find no error in the Examiner's combining Vaara with Fischer and Zadeh.

Regarding Appellant's arguments with respect to the subject matter of claims 7-9, 13-15, 18, and 19 (App. Br. 23-28), our previous discussion regarding claims 1, 12, and 20 applies equally here and we therefore, incorporate that discussion by reference. For the reasons previously discussed, we are not persuaded by Appellant's arguments. Accordingly, since Appellant has not persuasively rebutted the Examiner's prima facie

case of obviousness for claims 7-9, 13-15, 18, and 19, the Examiner's rejection of those claims is therefore sustained.

DECISION

We have sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 1, 2, 4-21, and 23 is affirmed.

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

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