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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICK A. HAMILTON II, NEIL A. KATZ,
BRIAN M. O'CONNELL, and KEITH R. WALKER

Appeal 2017-002357
Application 11/608,859
Technology Center 2400

Before JOHN A. EVANS, STACEY G. WHITE, and DANIEL J. GALLIGAN,
Administrative Patent Judges.

GALLIGAN, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants¹ seek our review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.²

¹ The Appeal Brief identifies IBM Corporation as the real party in interest. App. Br. 1.

² Our Decision refers to Appellants' Appeal Brief filed on April 1, 2016 ("App. Br."); Appellants' Reply Brief filed on December 5, 2016 ("Reply Br."); Examiner's Answer mailed October 6, 2016 ("Ans."); and original Specification filed December 11, 2006 ("Spec").

STATEMENT OF THE CASE
Claims on Appeal

Claims 1, 14, and 20 are independent. Independent claim 1, reproduced below, is illustrative of the subject matter in appeal.

1. A method of caching data at an edge server within a communication network comprising:
 - predicting a future location of a user;
 - selecting the edge server within the communication network according to the future location;
 - selecting data to be sent to the edge server; and
 - sending the selected data to the selected edge server.

References

Shimura	US 2001/0003194 A1	June 7, 2001
Vargas-Hurlston	US 2004/0017310 A1	Jan. 29, 2004
Ranganathan	US 2004/0192342 A1	Sept. 30, 2004
Hayashi	US 2007/0255831 A1	Nov. 1, 2007
Hamalainen	US 7,929,494 B1	Apr. 19, 2011

Examiner's Rejections

Claims 1–20 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 3–4.

Claims 7, 8, and 17 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. *Id.* at 2.

Claims 1, 4–6, 10, 14–17, and 20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Ranganathan. *Id.* at 6–9.

Claims 2, 3, 8, and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Hayashi. *Id.* at 10–15.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Shimura. *Id.* at 15–16.

Claims 11, 12, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Vargas-Hurlston. *Id.* at 16–20.

Claims 13 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Hamalainen. *Id.* at 21–23.

ANALYSIS

35 U.S.C. § 101 *(Claims 1–20)*

In *Alice*, the Supreme Court set forth an analytical “framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 77 (2012)). The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If so, the second step is to consider the elements of the claims “individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to “search for an ‘inventive concept’ — i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

In rejecting claims 1–20 as being directed to patent-ineligible subject matter, the Examiner found that the claims “are directed to the abstract idea of ‘selecting a delivery point (e.g. server) for information based on a predicted location (i.e. prestaging resources)’ ((iii) an idea of itself).” Final Act. 3. Appellants argue the claims are not directed to an abstract idea (App. Br. 15–18), and we agree.

The Examiner explained that the claims “describe a desired function or outcome, without providing any limiting detail that confines the claim[s] to a particular solution to an identified problem. The purely functional nature of the claims confirm that it is directed to an abstract idea, not to a concrete embodiment of that idea.” Ans. 30. Independent claims 1 and 14, however, are directed, respectively, to a method of and a system for “caching data at an edge server within a communication network.” Independent claim 20 is directed to “[a] computer program product” having “a hardware implemented computer-readable storage device having computer-usable program code stored thereon that pushes data to an edge server within a communication network.” Each of these claims recites limitations defining how the caching or storing of data is performed. We do not agree with the Examiner’s determination that such subject matter is directed to an abstract idea.

Therefore, we do not sustain the Examiner’s rejection of claims 1–20 as being directed to patent-ineligible subject matter.

*35 U.S.C. § 112, Second Paragraph
(Claims 1–20)*

Claims 7, 8, and 17 recite data that is “frequently accessed by the user” or “recently accessed by the user.” The Examiner concluded these claims are indefinite because the terms “frequently” and “recently” are relative terms, they are “not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.” Final Act. 2.

Appellants argue the terms “frequently” and “recently” describe the ways in which data are selected “with reasonable precision”—“frequently” referring to “the

number of instances over a period of time” and “recently” referring to “an instance within a period of time.” App. Br. 11, 14. Appellants argue that, although

one skilled in the art may choose a different value for the number of instances over a period of time in order to find that the “data is frequently accessed by the user,” this does not change that one having ordinary skill in the art would be reasonably apprised of what is meant by “frequently.”

App. Br. 11. According to Appellants, “[t]he Examiner confuses claim breadth with indefiniteness.” App. Br. 11.

We are not persuaded by Appellants’ arguments. It is the breadth of “frequently” and “recently,” as these terms are used in the claims, that renders the claims indefinite because these terms do not sufficiently define the limits of the claims. Patent Owner acknowledges that “frequently” can refer to any amount of frequency. App. Br. 11. Under such a boundless interpretation of “frequently,” any data could qualify as “data that is frequently accessed by the user.” Thus, the use of “frequently” and “recently” does not apprise the ordinarily skilled artisan of the scope of the claims.

Therefore, we sustain the Examiner’s rejection of claims 7, 8, and 17 under 35 U.S.C. § 112, second paragraph as being indefinite.

35 U.S.C. § 102(b)
(Claims 1, 4–6, 10, 14–17, and 20)

Independent claims 1, 14, and 20 recite various limitations reciting “edge server,” including “select[ing] the edge server within the communication network according to the future location.” As Appellants note, the claims were amended to recite “edge server” instead of “processing node.” App. Br. 23. The Examiner found Ranganathan’s base station describes the claimed edge server. Final Act. 6 (citing Ranganathan, [57], ¶¶ 20–22, 24). Appellants argue a person of ordinary skill in the art would not consider Ranganathan’s base stations as being edge

servers. App. Br. 23. Appellants argue that, “[w]hile an edge server can be a processing node, not all processing nodes are edge servers. For example, while a base station can be a processing node, it is not necessarily, i.e., inherently, an edge server.” App. Br. 24. Appellants further argue that “[t]he claimed ‘edge server’ is considerably more narrow than the previously claimed ‘processing node.’” App. Br. 25. Appellants also contend that “the Examiner has not produced any evidence that these base stations would be considered by those skilled in the art to be a particular type of server (i.e., an edge server).” App. Br. 27.

We disagree with Appellants. In the Final Office Action, the Examiner provided a detailed explanation for why Ranganathan’s base stations describe edge servers, first looking to Appellants’ Specification for guidance on the interpretation of “edge server” and then explaining the disclosure of Ranganathan. Final Act. 29–30. Appellants’ Specification states: “In one arrangement, each of the processing nodes 135-145 can be implemented as an ‘edge server’. That is, each of the processing nodes 135-145 can be located at distinct and different physical location within the communication network 130.” Spec. ¶ 25. The Examiner found:

Ranganathan clearly discloses a number of base stations which each service their particular base station area (i.e. lie at the edge of the network). The disclosed base stations also clearly serve segments of streaming information to wireless mobile devices associated with the base station/base station area. Therefore it is clear that Ranganathan’s base stations can be reasonably interpreted as the claimed “edge servers”.

Final Act. 30. Appellants fail to persuasively address this explanation by the Examiner. Rather, Appellants’ arguments focus on the difference in terminology—“edge server” versus “base station”—but, for anticipation, a prior art “reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is

not required. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009). We agree with the Examiner’s finding that Ranganathan’s “base stations also clearly serve segments of streaming information to wireless mobile devices associated with the base station/base station area” (Final Act. 30) because Ranganathan discloses that “[a] segment of streaming information is that portion of a streaming information request that is expected to be sent to, and be received by, a mobile wireless device as the mobile wireless device is within a particular base station service area, e.g., cellular area.” Ranganathan ¶ 20. Thus, each of Ranganathan’s base stations is “located at distinct and different physical location within the communication network 130,” as Appellants’ Specification describes an “edge server.” Spec. ¶ 25.

Therefore, we agree with the Examiner’s finding that Ranganathan’s base stations describe the claimed “edge server[s].” Thus, we sustain the Examiner’s anticipation rejection of independent claims 1, 14, and 20, as well as the anticipation rejection of dependent claims 4–6, 10, and 15–17, for which Appellants offer no additional persuasive arguments for patentability.

35 U.S.C. § 103(a)
(Claim 9)

Claim 9 recites: “The method of claim 1, wherein the selected data is data that was accessed by the user during a prior visit to the future location.” In concluding this subject matter would have been obvious, the Examiner relies on Hayashi’s disclosure of providing data to a user based on “vitality information,” which includes information such as location of the mobile device, past behavior of the mobile user, and weather. Final Act. 14–15 (citing Hayashi ¶¶ 21, 26).

Appellants argue

the Examiner cited the teachings of “past behavior of the mobile user” in Hayashi. However, these teachings do not correspond to the claimed limitations. What Hayashi specifically meant by “past

behavior of the mobile user” can only be based upon speculation since Hayashi does not go into further detail.

App. Br. 28.

We are not persuaded of Examiner error. Hayashi discloses that “vitality information” includes data such as “a location of the mobile device, weather information where the member is located, . . . past behavior of the mobile user and/or another member of the social network, the mobile user’s preferences.”

Hayashi ¶ 21. The Examiner concludes that

it would have been obvious to one of ordinary skill in the art that the time the invention was made to incorporate making a selection based on past behavior, as taught by, Hayashi into the system of Ranganathan for the purpose of making context based requests/ selections (Hayashi; abstract), thereby allowing the system to providing requests/results more relevant to the user.

Final Act. 15. Hayashi’s use of location information and “past behavior” of the user teaches that the user’s past behavior on its device at that location is used, which at least suggests that data from a previous visit to that location is used. Furthermore, Hayashi discloses that “vitality information” includes “weather information where the member is located.” Hayashi ¶ 21. Downloading weather information for a location each time a user is at that location means that the same data (weather data for that location) is used each time the user is in that location, thereby teaching, or at least suggesting, data that was accessed during a prior visit to that location. We, therefore, are not persuaded the Examiner erred in concluding the subject matter of claim 9 would have been obvious over the combination of Ranganathan and Hayashi.

Thus, we sustain the Examiner’s obviousness rejection of dependent claim 9.

*Remaining Rejections under 35 U.S.C. § 103(a)
(Dependent Claims 2, 3, 7, 8, 11–13, 18, and 19)*

Appellants do not provide separate persuasive arguments as to the obviousness rejections of dependent claims 2, 3, 7, 8, 11–13, 18, and 19. *See* App. Br. 28–31. We, therefore, sustain these rejections.

DECISION

The rejection of claims 1–20 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is REVERSED.

The rejection of claims 7, 8, and 17 under 35 U.S.C. § 112, second paragraph as being indefinite is AFFIRMED.

The rejection of claims 1, 4–6, 10, 14–17, and 20 under 35 U.S.C. § 102(b) as anticipated by Ranganathan is AFFIRMED.

The rejection of claims 2, 3, 8, and 9 under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Hayashi is AFFIRMED.

The rejection of claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Shimura is AFFIRMED.

The rejection of claims 11, 12, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Vargas-Hurlston is AFFIRMED.

The rejection of claims 13 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Ranganath and Hamalainen 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