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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GENNARO A. CUOMO, GARI R. SINGH, and MEETA YADAV

Appeal 2018-006355
Application 14/563,107
Technology Center 2600

Before JOSEPH L. DIXON, JAMES W. DEJMEK, and STEPHEN E. BELISLE, *Administrative Patent Judges*.

BELISLE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from a final rejection of all pending claims, namely, claims 8, 9, 11–16, and 18–24. App. Br. 2 and 4.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] Appellants identify International Business Machines Corporation as the real party in interest. App. Br. 2.

[2] This Decision refers to the Final Office Action mailed September 1, 2017 ("Final Act."); Appellants' Appeal Brief filed January 31, 2018 ("App. Br."); the Examiner's Answer mailed May 2, 2018 ("Ans."); Appellants' Reply Brief filed May 31, 2018 ("Reply Br."); and Appellants' Specification filed December 8, 2014 ("Spec.").

STATEMENT OF THE CASE

The Claimed Invention

Appellants' application relates to "methods, systems and computer program products for publishing messages within a geographic area." Abstract. In general, exemplary embodiments include "receiving a location from each of a plurality of user devices [e.g., "internet connected devices"] and creating a geo-hash tree based on the location of each of a plurality of user devices;" "receiving a message with [a] geographic area;" "computing a geo-hash grid for a region that includes the geographic area and identifying one or more nodes of the geo-hash tree that correspond to the geo-hash grid;" and "transmitting the message to one or more of the plurality of user devices associated with the one or more identified nodes." Spec. ¶¶ 2 and 4. In addition, exemplary embodiments include "performing a point in a polygon algorithm to determine if any of the one or more user devices are located inside the associated geographic area," and more specifically, to determine "whether a given point [e.g., user device] is located inside, outside, or on the boundary of a polygon." Spec. ¶ 36.

In the Specification, Appellants state it is known that many "[c]urrently available messaging systems . . . use a technique known as geo-hashing, which divides geographical areas into fixed size rectangles that are associated with a geo-hash code," but state that because "actual geographic areas of interest are seldom rectangles that perfectly align with a rectangle associated with a specific geo-hash code, geo-hashing suffers from both false positives and false negatives which can cause negative consequences." Spec. ¶ 3.

Appellants state that their method for routing messages based on geolocation, on the other hand, "is capable of routing a large volume of geolocation messages at predictably low latency with extremely high accuracy," and that in certain embodiments, "the method for routing messages based on geolocation achieves 100% accuracy and has a 0% false positive and 0% false negative rate." Spec. ¶ 37. Moreover, according to the Specification, "the messaging system is configured to allow the accuracy of the definition of the geographic area to be tuned to meet desired performance characteristics." Spec. ¶ 38.

Claim 8, reproduced below, is illustrative of the claimed subject matter on appeal:

> 8. A computer program product for publishing messages within a geographic area, the computer program product comprising:
>
> a non-transitory storage medium readable by a processing circuit and storing instructions for execution by the processing circuit for performing a method comprising:
>
> receiving a location from each of a plurality of user devices;
>
> creating a geo-hash tree based on the location of each of a plurality of user devices;
>
> receiving a message with the geographic area;
>
> computing a geo-hash grid for a region that includes the geographic area, wherein the region includes an entirety of the geographic area and one or more areas that are not within the geographic area;
>
> identifying one or more nodes of the geo-hash tree that correspond to the geo-hash grid as candidate nodes;
>
> performing a point in a polygon algorithm for each of the candidate nodes to determine if the one or more of the plurality of user devices associated with the candidate nodes are located

> inside or outside a boundary of the geographic area, wherein the point in the polygon algorithm is only performed for the candidate nodes and wherein the determination if the one or more of the plurality of user devices associated with the candidate nodes are located inside the geographic area is not based on the geo-hash grid of candidate nodes; and
>
> transmitting the message to one or more of the plurality of user devices associated with the candidate nodes that are determined to be located inside the geographic area.

References

The Examiner relies on the following references as evidence of unpatentability of the claims on appeal:

Baldwin	US 2006/0068762 A1	Mar. 30, 2006
Harrington	US 2012/0327837 A1	Dec. 27, 2012
Rahnama	US 2013/0212065 A1	Aug. 15, 2013
Rana	US 2014/0274154 A1	Sept. 18, 2014
Chow	US 2015/0215409 A1	July 30, 2015

Rejections

The Examiner made the following rejections of the claims on appeal:

Claims 8, 9, 11–16, and 18–24 stand provisionally rejected on the ground of nonstatutory double-patenting as being unpatentable over claims 1–9 of co-pending U.S. Patent Application No. 14/817,415 in view of Rana.

Claims 8, 9, 11–16, and 18–20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rana in view of Chow and further in view of Harrington.

Claims 21 and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rana, Chow, and Harrington as applied to independent claims 8 and 15, respectively, and further in view of Rahnama.

Claims 23 and 24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rana, Chow, and Harrington as applied to independent claims 8 and 15, respectively, and further in view of Baldwin.

ANALYSIS

Provisional Obviousness-type Double Patenting Rejection

Appellants do not respond to the Examiner's provisional rejection of claims 8, 9, 11–16, and 18–24 under the doctrine of obviousness-type double patenting other than to request during prosecution that the rejection "be held in abeyance." App. Response After Final Action, filed Oct. 31, 2017, at 9. Appellants neither list nor address this provisional rejection in their Appeal Brief or Reply Brief as one of the grounds of rejection to be reviewed on appeal. App. Br. 4; *see* Reply Br. Appellants also have not filed a terminal disclaimer in the subject application or in co-pending U.S. Patent Application No. 14/817,415, which is a continuation of the subject application. In the Examiner's Answer, however, the Examiner maintained "[e]very ground of rejection set forth in the Office action dated September 1, 2017 from which the appeal is taken," including this provisional rejection. Ans. 2. Because the rejection is still maintained (i.e., the Examiner has not withdrawn the rejection), it is still properly before the Board.

To the extent Appellants have not advanced separate, substantive arguments for particular claims or issues, such arguments are considered waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017); *see also Hyatt v. Dudas*, 551 F.3d 1307, 1314 (Fed. Cir. 2008) ("When the appellant fails to contest a ground of rejection to the Board, . . . the Board may treat any argument with respect to that ground of rejection as waived."). Additionally, "[i]f a ground

of rejection stated by the examiner is not addressed in the appellant's brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it unless the examiner subsequently withdrew the rejection in the examiner's answer." Manual of Patent Examining Procedure ("MPEP") § 1205.02 (9th ed. Rev. 08.2017, Jan. 2018).

Accordingly, we summarily sustain the Examiner's provisional rejection of claims 8, 9, 11–16, and 18–24 under the doctrine of obviousness-type double patenting.

Rejections under 35 U.S.C. § 103

The Examiner finds Rana teaches all elements of independent claim 8, except for the elements shown in italics in the two limitations reproduced below:

(A) "computing a geo-hash grid for a region that includes the geographic area, *wherein the region includes an entirety of the geographic area and one or more areas that are not within the geographic area*" ("Limitation A"); and

(B) "performing a point in a polygon algorithm for each of the candidate nodes to determine if the one or more of the plurality of user devices associated with the candidate nodes are located inside *or outside a boundary of* the geographic area, wherein the point in polygon algorithm is only performed for the candidate nodes *and wherein the determination if the one or more of the plurality of user devices associated with the candidate nodes are located inside the geographic area is not based on the geo-has [sic: geo-hash] grid of candidate nodes*" ("Limitation B"). Final Act. 8–9.

However, the Examiner finds Chow teaches Limitation A. Final Act. 8 (Chow's "geohash boxes encompass subscription circle 400

(i.e., geographic area), wherein parts of the geohash boxes encompass areas not within the subscription circle 400") (emphasis omitted); Ans. 2–3 (citing Chow Figure 4). The Examiner concludes that one of ordinary skill in the art would have been motivated to combine Rana and Chow to allow location-based subscriptions and publications to be managed more efficiently. Final Act. 8–9. Although Appellants initially assert that Chow fails to teach Limitation A, *see* App. Br. 5–6, Appellants subsequently acknowledge Chow teaches "identifying a single geo-hash grid that includes an entire geographic region, and some areas not within the region," Reply Br. 1, thus leaving only Limitation B at issue in this appeal.

The Examiner finds Harrington teaches Limitation B. Final Act. 9–10; Ans. 3–6. As support, the Examiner relies on Harrington's Figures 3A–3C and certain related disclosure, namely, paragraphs 41 and 47–49. Final Act. 9. Figure 3C is reproduced below:

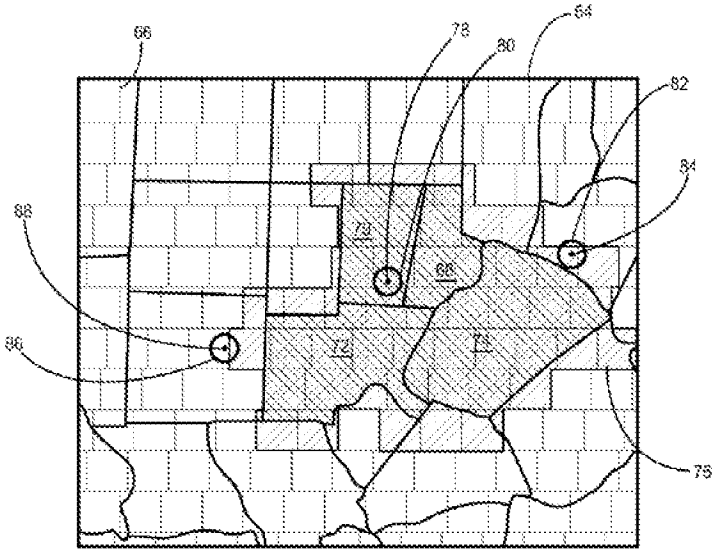

Figure 3C of Harrington illustrates the determination of a region to which an emergency alert is to be provided, and includes a partial map of North Carolina divided by county (e.g., Durham (68), Orange (70), Chatham

(72) and Wake (74) counties), along with an overlaid array of equally-sized squares (66).[3] Figure 3C also depicts a region (76), which is a single region established by all of the overlaid grid portions (66) that contact targeted counties. Harrington ¶ 48. The Examiner finds Harrington teaches that user devices located within region (76) will receive emergency alerts and user devices located outside of the region (76) may still receive alerts if desired, and that this teaches "performing a point in a polygon algorithm to determine if the user devices are located inside or outside a boundary." Final Act. 9. The Examiner also finds Harrington teaches that "specific user devices located substantially in the region 76" may be identified, and that "the location determination is based on a third party access point or GPS [global positioning system]." Final Act. 9–10; Ans. 3–5. The Examiner concludes Harrington teaches location determination not being based on a geo-hash grid. Final Act. 10.

Appellants contend that, unlike the art of record:

> [T]he determination of whether a node is located with [sic: within] the region of interest is not based on the geo-hash of the node or the geo-hash grid that includes the entire geographic area. Rather, the point in polygon algorithm utilizes the location of the candidate nodes and the boundary of the geographic area. By performing the point in polygon algorithm, the method can determine whether the nodes are located *inside the geographic area and not within the one or more areas that are not within the geographic area that are included in the region*.

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[3] Although Harrington's Specification does not correlate "an overlaid array of equally-sized squares" with a particular drawing feature number, we find the corresponding feature to be No. 66 in Figure 3C.

App. Br. 6 (emphasis added).

> Harrington teaches a method for providing notification for devices in a geographic area that forces a user to select whether to be over/under inclusive by either distributing the notice to devices outside of their desired are [sic: area] or to not distribute the message to some devices in the desired area. In the claimed system, the user is not forced to make such a choice, rather *the claimed two step process performs a method similar to the over inclusive method of Harrington and then performs a point in polygon algorithm to identify the devices that are not actually in the desired region but which were found in the over inclusive estimate of the region.*

App. Br. 7–8 (emphasis added).

According to Appellants, "what [the combination of Rana, Chow, and Harrington] fails to teach is that only the devices within [the] single geo-hash grid are then subject to the point in polygon algorithm to determine if the devices are actually within the geographic region." Reply Br. 1–2. We agree.

Rana teaches a geographic area ("[a] polygon can refer a geographic demarcation of an area"), and creating a geo-hash grid pattern to approximate the geographic area ("area of the polygon 200 is taken to be the collective area defined by all the [geo-hash] tiles that form the polygon"). Rana ¶¶ 68–69. Rana teaches that some of the geo-hash tiles, if of a minimum size, may fall at least partially outside the geographic area. Rana ¶ 75 ("If a tile is reduced to the minimum size (e.g., the maximum precision) but still intersects the desired polygon, it is considered to be inside the polygon and included in the index."). Rana also teaches identifying whether a client (or received location identifier) is within the geo-hash grid pattern. Rana ¶¶ 95–97, Fig. 9. Because the grid pattern of Rana is generally optimized to approximate the geographic area, Rana does not

perform a second determination of whether the identified candidate nodes also fall only within the geographic area. *See* Rana ¶¶ 95–97, Fig. 9.

As discussed above, Harrington also teaches identifying user devices (i.e., candidate nodes) within the single region (76) established by overlaid grid portions (66). However, the Examiner has not provided sufficient evidence or technical reasoning to support a finding that Harrington subsequently performs a point in a polygon algorithm to determine whether the identified candidate nodes are located only within the geographic area, which is contained within the grid region (76). Additionally, the Examiner has not shown how Harrington (or Chow) in combination with Rana teaches or reasonably suggests performing a point in a polygon algorithm for each of the identified candidate nodes to determine whether they are located only within the claimed geographic area. Accordingly, we find that the Examiner has not shown by a preponderance of the evidence that the combination of Rana, Chow, and Harrington teaches or suggests Limitation B of illustrative independent claim 8.[4]

For the reasons discussed *supra*, we do not sustain the Examiner's rejection of independent claim 8 under 35 U.S.C. § 103. Because independent claim 15 contains limitations similar to independent claim 8, we likewise do not sustain the Examiner's rejection of independent claim 15

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[4] We do not opine herein on whether Appellants have identified sufficient support in the Specification for Limitations A and B as presently amended and leave it to the Examiner to further consider this issue in any further prosecution on the merits. Although the Board is authorized to reject claims under 37 C.F.R. § 41.50(b), no inference should be drawn when the Board elects not to do so. *See* MPEP § 1213.02.

under 35 U.S.C. § 103. Additionally, we do not sustain the Examiner's rejections under 35 U.S.C. § 103 of claims 9, 11–14, 16, and 18–20, which depend directly or indirectly from either claims 8 or 15.

Moreover, the Examiner has not identified how any of the additional references, namely, Rahnama and Baldwin, remedy the noted deficiency above. As a result, we do not sustain the Examiner's rejection of claims 21–24 under 35 U.S.C. § 103.

DECISION

We summarily affirm the Examiner's decision provisionally rejecting claims 8, 9, 11–16, and 18–24 under the doctrine of obviousness-type double patenting.

We reverse the Examiner's decision rejecting claims 8, 9, 11–16, and 18–24 under 35 U.S.C. § 103.

Because we affirm at least one ground of rejection with respect to each claim on appeal, the Examiner's decision rejecting claims 8, 9, 11–16, and 18–24 is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

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