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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SARTAJ K. SAHNI and TANIA BANERJEE

Appeal 2019-000585
Application 14/212,107
Technology Center 2100

Before LINZY T. McCARTNEY, JAMES W. DEJMEK,
STEVEN M. AMUNDSON, *Administrative Patent Judges.*

McCARTNEY, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant¹ seeks review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 1–5, 7, 9–16, 18–20, 22, and 24–29. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 (2017). Appellant identifies the real party in interest as the University of Florida Research Foundation, Incorporated. Appeal Brief 1, filed May 21, 2018 (“Appeal Br.”).

BACKGROUND

This patent application concerns a “publish/subscribe system.” *See* Specification ¶ 10, filed March 14, 2014 (“Spec.”). Claims 1, 10, and 19 are independent. Claim 1 illustrates the claimed subject matter:

1. A publish/subscribe system comprising:

a database storing subscriptions; and

a database manager that when executed by one or more processors directs the one or more processors to:

perform an update action with respect to a subscription to the database by:

using attributes of the subscription to follow a path in a heterogeneous hierarchical subscription data structure stored in the database until a lowest level is reached where the number of subscriptions does not exceed bucket capacity, wherein the attributes of the subscription are ordered from least occurring at a root of the data structure to most frequently occurring based on a frequency of occurrence of the attributes in the subscriptions in the database, wherein the heterogeneous hierarchical subscription data structure is configured to use different data structures for different attributes; and

performing the update action at an appropriate bucket of the database determined by the following of the path in the hierarchical subscription data structure; and

searching for one or more matching subscriptions for an event by:

using the hierarchical subscription data structure to determine which buckets of the subscription structure are to be searched; and

searching the buckets of the subscription structure which are to be searched for the one or more subscriptions that match the event.

REJECTIONS

Claims	35 U.S.C. §	References
1–3, 9–12, 18, 25, 26, 28, 29	103(a)	Chow, ² Wijbrans, ³ Ish ⁴
4, 5, 7, 13–16	103(a)	Chow, Wijbrans, Ish, Damm, ⁵ Fujihara ⁶
19, 27	103(a)	Chow, Ish
20, 22, 24	103(a)	Chow, Ish, Damm, Fujihara

DISCUSSION

Claim 1 recites “wherein the heterogeneous hierarchical subscription data structure is configured to use different data structures for different attributes.” Appeal Br. 14. The Examiner found that Chow teaches this limitation because Chow discloses a “geohash representation” that includes “geohash boxes.” *See* Final Office Action 4–5, mailed October 24, 2017 (“Final Act.”); Examiner’s Answer 3–6, mailed September 10, 2018 (“Ans.”). According to the Examiner, Chow’s geohash representations have a “hierarchical natural” and are “unique and thus[] dissimilar or heterogeneous.” Ans. 5. The Examiner also found that Chow teaches this limitation because Chow discloses a system that “provides services to a variety of computer systems/platforms and thus[] can manag[e] different data types.” Final Act. 3 (emphasis omitted).

Appellant contends that the Examiner erred because the cited parts of Chow describe a *homogenous* data structure that has subdivisions, not a

² Chow et al. (US 2015/0215409 A1; July 30, 2015).

³ Wijbrans et al. (US 2015/0020196 A1; January 15, 2015).

⁴ Ish et al. (US 5,778,430; July 7, 1998).

⁵ Damm et al. (US 2005/0050060 A1; March 3, 2005).

⁶ Fujihara (US 5,778,371; July 7, 1998).

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heterogeneous data structure configured to use different data structures for different attributes. *See* Appeal Br. 4–8; Reply Brief 11–14, filed November 1, 2018 (“Reply Br.”). Appellant also contends that even if Chow provides services to different types of devices and can manage different types of data, that does not establish that Chow uses a heterogeneous hierarchical subscription data structure. *See* Appeal Br. 6–8.

We agree with Appellant. The parts of Chow cited by the Examiner describe a data structure that has subdivisions or sections, not a heterogeneous data structure configured to use different data structures for different attributes. *See, e.g.*, Chow ¶ 28 (explaining that Chow’s system “uses a hierarchical spatial coding scheme that subdivides space into grid-shaped cells” and that “a geohash representation of a subscription area may be determined . . . by recursive divisions, starting from the entire geohash location domain.”), Figs. 3, 4 (showing geohash representations). And even if Chow provides services to different types of devices and can manage different types of data as found by the Examiner, this fact does not establish that Chow uses a heterogeneous hierarchical subscription data structure to do so, let alone a heterogeneous hierarchical subscription data structure that is configured to use different data structures for different attributes. We thus do not sustain the Examiner’s obviousness rejections of claim 1 and its dependent claims. Because the Examiner’s obviousness rejections of claims 10 and 19 have similar deficiencies, we also do not sustain the Examiner’s obviousness rejections of claims 10 and 19 and their respective dependent claims.

CONCLUSION

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
1-3, 9-12, 18, 25, 26, 28, 29	103(a)	Chow, Wijbrans, Ish		1-3, 9-12, 18, 25, 26, 28, 29
4, 5, 7, 13- 16	103(a)	Chow, Wijbrans, Ish, Damm, Fujihara		4, 5, 7, 13- 16
19, 27	103(a)	Chow, Ish		19, 27
20, 22, 24	103(a)	Chow, Ish, Damm, Fujihara		20, 22, 24
Overall Outcome				1-5, 7, 9- 16, 18-20, 22, 24-29

REVERSED