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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SHAYAN G. ZADEH, ALEXANDER F. MEHR, and CHARLES E. GOTLIEB

Appeal 2018-004195[1]
Application 13/706,182[2]
Technology Center 2100

Before MICHAEL J. STRAUSS, JAMES B. ARPIN, and JOSEPH P. LENTIVECH, *Administrative Patent Judges*.

ARPIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) the Examiner's decision rejecting claims 1, 3–8, 10–15, and 17–21. Non-Final Act. 3–4, 10. Claims 2, 9, and 16 are cancelled. *Id.* at 2. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] In this Decision, we refer to Appellants' Appeal Brief ("App. Br.," filed August 1, 2017) and Reply Brief, ("Reply Br.," filed February 12, 2018); the Non-Final Office Action ("Non-Final Act.," mailed December 1, 2016); the Examiner's Answer ("Ans.," mailed December 11, 2017); and the originally-filed Specification ("Spec.," filed December 5, 2012).

[2] According to Appellants, the real party-in-interest is Zoosk, Inc. App. Br. 2.

STATEMENT OF THE CASE

Appellants' recited methods, devices, and program products relate to "identify[ing second] users not only nearby or otherwise convenient for [a first] user to interact with, but also compatible with that [first] user." Spec. 2:8–11. As noted above, claims 1, 3–10, and 12–19 are pending. Claim 1, directed to methods of displaying location information of at least one first user to a second user, claim 8, directed to systems for displaying location information of at least one first user to a second user, and claim 15, directed to computer program products for displaying location information of at least one first user to a second user, are independent. App. Br. Claims App'x. Claims 3–7 depend directly or indirectly from claim 1, claims 10–14 depend directly or indirectly from claim 8, and claims 17–21 depend directly or indirectly from claim 15. *Id.*

Claim 1, reproduced below, is representative.

> 1. A method of displaying location information of at least one first user to a second user, comprising:
>
> receiving, at a computer system comprising a hardware processor coupled to a memory, location information from a plurality of third users comprising the at least one first user, and from the second user;
>
> receiving, at the computer system comprising the hardware processor coupled to the memory, from the second user information indicating at least one preference for a plurality of characteristics of other users;
>
> receiving, at the computer system comprising the hardware processor coupled to the memory, from each of the plurality of third users information comprising a plurality of characteristics of that user;
>
> *calculating, at the computer system comprising the hardware processor coupled to the memory, a distance between*

an object different from any of the plurality of third users and the second user;

selecting, at the computer system comprising the hardware processor coupled to the memory, the at least one first user from the plurality of third users in response to the current locations of the plurality of third users and the second user, the preference of the second user, the characteristics of the plurality of the third users, and a distance between the object and the locations of the plurality of third users and the distance calculated between the object and the second user; and

providing, from the computer system comprising the hardware processor coupled to the memory, for display to the second user information in response to the location information of the at least one first user selected.

Id. (disputed limitations emphasized); *see* App. Br. 2–7.

REFERENCES

The Examiner relies upon the following prior art in rejecting the pending claims:[3]

Bourne ("Bourne")	US 2005/0177614 A1	Aug. 11, 2005
Robinson *et al.* ("Robinson")	US 2008/0086261 A1	Apr. 10, 2008
Scheibe ("Scheibe")	US 2009/0100037 A1	Apr. 16, 2009
Flinn *et al.* ("Flinn")	US 2011/0302209 A1	Dec. 8, 2011

[3] The Examiner identifies other references, including Kahn and Tuck, as also supporting findings underlying the rejections. Non-Final Act. 15–18; Ans. 18–20. Nevertheless, those references are not included in the Examiner's stated rejections or identified as contributing to any new grounds of rejection. Ans. 3. Therefore, we do not address them further in this decision. *See* App. Br. 14–16, 18; Reply Br. 13–14. As discussed below, the Examiner did not err in concluding that Robinson, Bourne, and Flinn, alone or in combination with Scheibe, render the pending claims obvious.

THE REJECTIONS

Claims 1, 3–8, 10–15, and 17–21 stand rejected under 35 U.S.C. § 112, ¶ 2, as indefinite. Non-Final Act. 2–3. Claims 1, 3, 4, 6–8, 10, 13–15, 17, 18, and 21 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over the combined teachings of Robinson, Bourne, and Flinn. *Id.* at 4–10. Claims 5, 12, and 19 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over the combined teachings of Robinson, Bourne, Flinn, and Scheibe. *Id.* at 10–11.

Unless otherwise indicated, we adopt the Examiner's findings in the Answer as our own and add any additional findings of fact appearing below for emphasis. We address these rejections below.

ANALYSIS

A. Indefiniteness

The Examiner finds independent claims 1, 8, and 15 are indefinite and, consequently, claims 3–7, 10–14, and 17–21, which depend from claims, 1, 8, or 15, also are indefinite. Non-Final Act. 2–3; Ans. 4–5. For purposes of this Appeal, Appellants contest the indefiniteness rejections of independent claims 1, 8, and 15 together. App. Br. 7–9; Reply Br. 17–20. The rejections of dependent claims 3–7, 10–14, and 17–21 stand or fall with the rejections of independent claims 1, 8, and 15. *See* App. Br. 9; Reply Br. 20.

In particular, the Examiner finds that claim 1 recites "selecting . . . the at least one first user from the plurality of third users *in response to*" five factors:

> *the current locations of the plurality of third users and the second user,*

> *the preference of the second user,*
> *the characteristics of the plurality of the third users,*
> *a distance between the object and the locations of the plurality of third users,*
> *the distance calculated between the object and the second user.*

Ans. 4. The Examiner finds that this language is "overly broad and makes the entire claim indefinite because it is unclear how a selection can be *in response to* the recited parameters." *Id.*

> Particularly, the claim language fails to provide with any certainty what it means for the selection to be "*in response*" to the above parameters, and further fails to recite any meaningful relationship therebetween. That is, it is unclear how these parameters narrow the scope of the claim at all. To wit, there is no recitation of how these parameters may be used or measured to define a condition for the claimed selection step, thus leaving the reader to speculate about the same. This renders the claim overbroad and indefinite.

Id. at 5.

Appellants acknowledge that the claims are broad, but disagree that their breadth renders them indefinite. App. Br. 8 ("Examiner rejects the 'in response to' language, which is admittedly broad, but does not make a determination of the scope to be impossible, as 'in response to' has a well understood meaning."), Reply Br. 18 ("Examiner also attempts . . . to state that too much breadth is in fact indefiniteness"). Appellants contend that a person of ordinary skill in the art would understand from the claim language that the selection depends upon each of the recited factors. There are no undefinable terms in the factors and no relative terms suggesting that a factor may be omitted. *See* Ans. 13. According to Appellants, the factors recited in claims 1, 8, and 15 are not difficult for one skilled in the art to understand. The Examiner does not contest this assertion. *See* Non-Final

Act. 3 (interpreting claims 1, 8, and 15 for purposes of compact prosecution). Thus, Appellants contend "there is no uncertainty at all. The factors specified in the claims for which the claimed invention is 'in response to' are either used to perform the functions claimed or they aren't." Reply Br. 18; *see id.* at 19 ("One either uses the factors claimed or they don't."). We agree.

Because a person of ordinary skill in the art would understand the identified factors and because, as Appellants contend, the claim language makes clear that *all* of the factors are considered in performing the "selecting" step,[4] we are persuaded that the independent claims are broad, but not indefinite. Thus, we are persuaded that the Examiner erred in rejecting independent claims 1, 8, and 15 and the claims that depend therefrom as indefinite, and we do not sustain those rejections.

B. Obviousness Over Robinson, Bourne, and Flinn

1. Independent Claims 1, 8, and 15

For purposes of this Appeal, the Examiner argues the obviousness rejections of independent claims 1, 8, and 15 together. Non-Final Act. 4–7; Ans. 6–12. In particular, the Examiner finds that Robinson teaches or suggests the recited step of "receiving . . . location information from a plurality of third users comprising the at least one first user, and from the second user." Non-Final Act. 4, 11 (citing Robinson ¶ 12); Ans. 7–8; *see* Robinson ¶ 11, Figs. 1 and 2. The Examiner further finds that Robinson

[4] As discussed below, this consideration does not prevent "the distance calculated between the object and the second user" from equaling zero. *See* Non-Final Act. 12; *see also* App. Br. Claims App'x (claim 5 recites "the speed of travel of the second user," which also may be zero).

teaches or suggests the recited step of "receiving . . . from the second user information indicating at least one preference for a plurality of characteristics of other users." Non-Final Act. 4, 11 (citing Robinson ¶¶ 46, 54, Fig. 3); Ans. 8; *see* Robinson ¶ 11. The Examiner also finds that Robinson teaches or suggests the recited step of "receiving . . . from each of the plurality of third users information comprising a plurality of characteristics of that user." Non-Final Act. 4, 11–12 (citing Robinson ¶¶ 42, 54); Ans. 8; *see* Robinson ¶ 49 (discussing steps 306 and 308 of Fig. 3). Appellants do not contest the mapping of these "receiving" steps on Robinson's teachings. *See* App. Br. 15; Reply Br. 17.

In addition, the Examiner finds that Robinson teaches or suggests the recited step of "providing . . . for display to the second user information in response to the location information of the at least one first user selected." Non-Final Act. 7 (citing Robinson ¶¶ 50, 67); Ans. 12. Appellants do not contest the mapping of this "providing" step on Robinson's teachings. *See* App. Br. 15; Reply Br. 17.

Each of the steps of method claim 1 also refers to "a computer system comprising a hardware processor coupled to a memory." *See also* App. Br. Claims App'x (Claim 8 recites "a GPS receipt manager comprising a hardware processor 5 system coupled to a memory system," and claim 15 recites "calculat[ing], at the computer system comprising the hardware processor coupled to the memory."). Robinson teaches that "a computer system comprising a hardware processor coupled to memory" may be used to perform the steps of the methods of claim 1. Non-Final Act. 7 (citing Robinson, Fig. 9 (depicting computed 902 having processing unit 904 and

system memory 906)); Ans. 12. Appellants also do not contest the mapping of these limitations on Robinson's teachings. *See* App. Br. 15; Reply Br. 17.

The Examiner further finds that Robinson teaches or suggests four of the five factors recited in the "selecting" step. Non-Final Act. 4–5; Ans. 9–10. In particular, the Examiner finds that Robinson teaches or suggests selecting a candidate, i.e., a first user, from a group of candidates, i.e., third users, "in response to" or based on (1) the current locations of the second and third users (Robinson ¶¶ 47, 50, 67, Figs. 2 (steps 202–212) and 3 (step 310); *see* Non-Final Act. 5), (2) the matching of the second user's *preferences* with *characteristics* of third users (Robinson ¶¶ 49, 50, 67, Fig. 3 (steps 302 and 308); *see* Non-Final Act. 5), and (3) distances between an object and the locations of the third users (Robinson ¶¶ 47 48; *see* Non-Final Act. 5; Ans. 6). Regarding the relative locations of an object and third users, Robinson teaches that:

> At [step] **304** [of Figure 3], a preferred location can be identified by the user. In this act, the user can identify a location by which candidates should be searched. In one example, this preferred location can define a radius around a city or other location. In other aspects, the preferred location can be a specific city, state, building, park, amusement park, etc. *In other words, the granularity of the preferred location can be of most any desired by a user.*

Robinson ¶ 47 (emphasis added); *see* Non-Final Act. 5. In another example, the preferred location may be defined by a radius X from the user's current location. Robinson ¶ 48; *see* Non-Final Act. 5. Robinson explains that the user's current location may be determined by "GPS location detection or other suitable location determination systems," such as through a mobile phone or other similar device, e.g., an object. Robinson ¶¶ 2, 32, 41, 48; *see* Spec. 3:2–9. Thus, it is not contrary to Robinson's intended purpose to

distinguish between users based on their distance from an object. *See* App. Br. 16, 17–18; Reply Br. 2, 16.

The Examiner finds Robinson also teaches the step of "calculating . . . a distance between an object different from any of the plurality of third users and the second user." Non-Final Act. 12; Ans. 20 ("[T]he primary reference **Robinson** teaches the essence of the claimed subject matter, including calculating the distance of a candidate from a first object associated with a seeking user."). Although claims recite that the locations of the third users are different from the location of the object, no such requirement is imposed on the second user. Thus, the Examiner explains:

> For example, it is noted that if Robinson is considered individually, based on the broadest reasonable interpretation of the claim language, it reads upon the claimed limitations in a scenario where the object is the user's cellphone and *the distance between the user and the cell phone is zero*, for example.

Non-Final Act. 12 (emphasis added). Appellants contend, if the object and the second user are at the same location and there is *zero* distance between them, there is no reason to "calculate" the distance, as recited in the independent claims. App. Br. 13, 21. Nevertheless, we interpret "calculating" broadly. App. Br. 8; Reply Br. 12; *see* Spec. 29:7–14. Given that *only* the third users are required to be at a location different from that of the object, we agree with the Examiner that the "calculating" step encompasses determining that the distance between the second user and an object is zero. Alternatively, the Examiner finds the combined teachings of Robinson and Bourne teach or suggest this "calculating" step. Ans. 6–7; *but see* App. Br. 19–22. Again, we agree with the Examiner.

The Examiner acknowledges that Robinson does not explicitly teach or suggest "the limitations associated with using a distance between a

[second] user and an object *as a selection criteri[on]*." Non-Final Act. 5 (emphasis added). The Examiner finds, however, that this limitation is taught or suggested by Bourne and Flinn and that a person of ordinary skill in the art would have been motivated to combine the teachings of these references with those of Robinson to improve match quality or meeting convenience and thereby achieve the method recited by claim 1. *Id.* at 5–7. In particular, the Examiner finds that Bourne teaches "using location information for finding a match within proximity of a location of interest (i.e., based on distance of the user and the candidate from a common location or object)." *Id.* at 5 (citing Bourne ¶ 26). According to Bourne,

> As used herein, a user "activates" the service to attempt to obtain an introduction to another mobile device user, typically one that is a given location within an overlapping time window. Typically, mobile device users are potentially introduced only if they are within a given physical proximity within overlapping time windows, i.e., at a given time when such introductions are possible. . . . If automated location data is not available, the message may include location-related data, such as a zip code, a landmark, an airport code, or other identifier, from which location can be derived.

Bourne ¶ 26; *see id.* ¶ 34 (defining "physical proximity"). The Examiner finds that Bourne teaches selecting candidates based on the candidates' proximity to the user and a landmark. Non-Final Act. 6; Ans. 7.

Appellants contend, however, that "Bourne focuses on matching based on 'intellectual proximity', and so Bourne never describes the actual proximity matching." App. Br. 11. In addition, Appellants contend that Bourne teaches either automatically or manually identifying the candidate's location. *Id.*; Reply Br. 4. Thus, Appellants contend that Bourne's matching

may occur based on an input location rather than an actual location. We disagree.

Initially, we note that the pending claims do not specify the source or accuracy of the "location information." Further, contrary to Appellants' contentions, Bourne teaches making candidate selections based on the user's and the candidate's "intellectual proximity," e.g., their matching preferences and characteristics, *and* their "physical proximity." Bourne ¶ 6; *see id.* ¶ 5 (defining "intellectual proximity"). Thus, Bourne teaches that "a given intellectual proximity condition or threshold might be relaxed or strengthened if prospective mobile users are close to one another (e.g., at the same trade show)," that is if they are both close to the same object.

Because both Robinson and Bourne teach methods that employ the relative location of users and candidates and matching user preferences and candidate characteristics to make selections, the Examiner finds that a person of ordinary skill in the art would have had reason to combine Bourne's teachings regarding improved mapping based on user and candidate proximity to a common object with those of Robinson. Non-Final Act. 6; Ans. 7. We agree.

Anticipating challenges to the sufficiency of the teachings of Robinson and Bourne (Non-Final Act. 6), the Examiner further finds that Flinn teaches that users and candidates may be matched based on their proximity to each other and to physical objects (*id.* (citing Flinn, Table 1, ¶ 45)). In particular, Flinn's Table 1 suggests "a variety of different user behaviors **920**, which, may be used by the one or more computer-based applications **925** as a basis for recommending a first person to a second person." Flinn ¶ 32. Among these behaviors, Flinn's Table 1 identifies

"environmental conditions and locations" including "current location," "location over time," and "relative location to users/object references." Flinn explains that "[p]roximity of a user to a second user (including a first person that will be, or has already been, recommended to a second person), *or to physical objects* referenced by elements or objects of the computer-based application, may be inferred." *Id.* ¶ 45 (emphasis added).

Appellants disagree, first contending that Flinn does not teach or suggest that the "proximate location of the users to each other *or to common objects* may be utilized as a matching criteria." Reply Br. 5 (quoting Ans. 7 (emphasis added)). Appellants assert that:

> "Common" objects is not something Flinn notes. Flinn doesn't precisely describe the manner of making [the user's] matches, so we look to Flinn's claims for some sort of indication of what Flinn has in mind. It is noted that Flinn's claims don't recite using locations of users to "common objects" as stated by Examiner, and in fact note that the direct distance between the two users is what is used for the match (Flinn claims 2 and 9). Claim 10 of Flinn notes that the match may be based on the proximity of only <u>one</u> of the two people and an object, not both as asserted by Examiner.

Reply Br. 5. However, Appellants fail to note that Flinn's claim 17 recites that the people matching system of Flinn's claim 16 further comprises "a people matching function that generates the suggested match *in accordance with the proximity of the two people and a physical object*." Thus, Flinn explicitly teaches determining the locations of users with respect to a common object.

Next, Appellants contend that, unlike the methods of claim 1, Flinn teaches that proximity from one user to another or proximity from one user

to a physical object is "inferred."[5] App. Br. 14. Nevertheless, as the Examiner explains,

> the Office's reliance on **Flinn** has nothing to do with whether location or distance from a location may be inferred, and further nothing is recited in the claims that would distinguish how a distance or location may be determined, or why inferring a location or distance is distinguishable from determining or calculating the distance or location.

Ans. 18. Moreover, Appellants contend that Flinn fails to explain *how* location is used to determine matches. App. Br. 13–14. In particular, Appellants note that Flinn discloses using the length of time that a user remains in a location permits an inference of the user's "intensity of interest," but Appellants contend that Flinn never explains *how* the intensity is applied. *Id.* Given the broad interpretation of the "selecting" step of claim 1 (*id.* at 8; *see* Non-Final Act. 14), we are persuaded that Flinn's teachings regarding the use of the relative distances of users to a common object is sufficient to teach the disputed limitation of claim 1.

Because Robinson, Bourne, and Flinn teach methods that employ the relative location of users and candidates and matching user preferences and candidate characteristics to make selections (*see* Flinn, Table 1), the Examiner finds that a person of ordinary skill in the art would have had reason to combine Flinn's teachings regarding improved matching by the

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[5] Appellants contend that the Examiner improperly takes official notice that, as illustrated by Flinn, "it is 'well known' to use distance and location data from an object to select or match users." Reply Br. 10–11. Nevertheless, as Appellants note, "[i]f the reference shows a feature, it isn't necessary to assert it is well known, as a single reference is all that is necessary." *Id.* at 11; *see also* App. Br. 19–20, 22 (Appellants contentions regarding improper hindsight). We find that Flinn explicitly teaches this limitation.

proximity of users and candidates to a common object with those of Robinson and Bourne. Non-Final Act. 7; Ans. 11–12; *see KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("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."). We agree.

For the above reasons, the Examiner has shown that the combined teachings of Robinson, Bourne, and Flinn teach or suggest all of the limitations of independent claim 1 and that a person of ordinary skill in the art would have reason to combine the teachings of these references to achieve the methods of claim 1. Non-Final Act. 4–7; Ans. 6–12. Thus, we are not persuaded that the Examiner erred in concluding claim 1 is rendered obvious over Robinson, Bourne, and Flinn. The limitations of claim 1 are substantially the same as those recited in each of independent claims 8 and 15. App. Br. Claims App'x. Thus, we are persuaded that the Examiner has shown that claims 8 and 15 also are rendered obvious over Robinson, Bourne, and Flinn. Non-Final Act. 8. Thus, we sustain the rejections of independent claims 1, 8, and 15 under 35 U.S.C. § 103(a) over Robinson, Bourne, and Flinn.

2. Dependent Claims 3, 4, 6, 7, 10, 13, 14, 17, 18, and 21

The Examiner also concludes that claims 3, 4, 6, 7, 10, 13, 14, 17, 18, and 21, which depend directly or indirectly from independent claim 1, 8, or 15, are rendered obvious by Robinson, Bourne, and Flinn. Non-Final Act. 7–10. Appellants contend that, because the Examiner erred in rejecting independent claims 1, 8, and 15, we cannot sustain the rejections of

dependent claims 3, 4, 6, 7, 10, 13, 14, 17, 18, and 21. *See* Appeal Br. 23; Reply Br. 17. For the above reasons, we disagree, and, thus, we are not persuaded that the Examiner erred in the concluding claims 3, 4, 6, 7, 10, 13, 14, 17, 18, and 21 and 21 are rendered obvious by Robinson, Bourne, and Flinn and sustain the rejection of those claims under 35 U.S.C. § 103(a).

C. Obviousness Over Robinson, Bourne, Flinn, and Scheibe

Claims 5, 12, and 19 stand rejected as rendered obvious by the combined teachings of Robinson, Bourne, Flinn, and Scheibe. Non-Final Act. 10–11. Claims 5, 12, and 19 depend directly from claims 1, 8, and 15, respectively. Claims 5, 12, and 19 are not separately argued with particularity. Accordingly, we sustain the rejections of claims 5, 12, and 19 under 35 U.S.C. § 103(a) over Robinson, Bourne, Flinn, and Scheibe for the reasons discussed above in connection with claim 1.

We are not persuaded that the Examiner erred in rejecting claims 1, 3–8, 10–15, and 17–21 under 35 U.S.C. § 103(a) as rendered obvious over Robinson, Bourne, and Flinn, alone or in combination with Scheibe. Thus, we sustain the obviousness rejections.

DECISION

We reverse the Examiner's decision to reject claims 1, 3–8, 10–15, and 17–21 under 35 U.S.C. § 112, ¶ 2.

We affirm the Examiner's decision to reject claims 1, 3–8, 10–15, and 17–21 under 35 U.S.C. § 103(a).

Because at least one rejection encompassing all claims on appeal is affirmed, the decision of the Examiner 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)(l)(iv).

AFFIRMED