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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CORVILLE O. ALLEN, LUIS A. BENITEZ, and
LAURA J. RODRIGUEZ

Appeal 2018-007910¹
Application 14/588,520
Technology Center 2100

Before CARL W. WHITEHEAD JR., JASON V. MORGAN, and
JAMES B. ARPIN, *Administrative Patent Judges*.

ARPIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants² appeal under 35 U.S.C. § 134(a), the rejections of claims 1, 2, 4–13, and 15–23, all of the pending claims. Final Act. 2. Claims 3 and 14 are canceled. *Id.* We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ In this Decision, we refer to Appellants’ Appeal Brief (“App. Br.,” filed April 4, 2018) and Reply Brief (“Reply Br.,” filed July 31, 2018); the Final Office Action (“Final Act.,” mailed December 6, 2017); the Examiner’s Answer (“Ans.,” mailed June 12, 2018); and the originally-filed Specification (“Spec.,” filed January 2, 2015).

² Appellants assert International Business Machines Corporation is the real party-in-interest. App. Br. 2.

STATEMENT OF THE CASE

Appellants' recited methods, computer-program products, and apparatus "relate[] generally to an improved data processing apparatus and method and more specifically to mechanisms for tailoring the results, generated by a Question and Answer (QA) pipeline of a cognitive system, to the personality trait of a user that submitted the question." Spec. ¶ 1. As noted above, claims 1, 2, 4–13, and 15–23 are pending. Claims 1, 12, and 23 are independent. App. Br. 35–36, 38–39, 42–43 (Claims App'x). Claims 2 and 4–11 depend directly or indirectly from claim 1, and claims 13 and 15–22 depend directly or indirectly from claim 12. *Id.* at 36–42.

Claim 12 recites "[a] computer program product comprising a computer readable storage medium having a computer readable program stored therein, wherein the computer readable program, when executed on a computing system implement[s]" methods recited in claim 1. *Id.* at 35–36, 38–39. Claim 23 recites "[a]n apparatus comprising: a processor; and a memory coupled to the processor, wherein the memory comprises instructions which, when executed by the processor, cause the processor to implement" methods recited in claim 1. *Id.* at 35–36, 42–43. The Examiner relies on the same references and substantially the same arguments in challenging claims 1, 12, and 23. Therefore, we focus our analysis on the disputed and overlapping limitations of these independent claims. *See Accenture Global Servs. GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1341 (Fed. Cir. 2013) ("Although *CLS Bank* issued as a plurality opinion, in that case a majority of the court held that system claims that closely track method claims and are grounded by the same meaningful limitations will generally rise and fall together." (citation omitted)).

Claim 1, reproduced below with disputed limitations emphasized, is illustrative.

1. A method, in a Question and Answer (QA) system comprising a processor and a memory, the method comprising:

monitoring, by a communication system monitoring engine of the QA system, a communication exchange between a first computing device associated with a first party of the communication exchange, and a second computing device associated with a second party of the communication exchange;

automatically identifying, by the communication system monitoring engine of the QA system, an input question, for which an answer is sought, in content of the communication exchange between the first computing device and the second computing device;

processing, by the QA system, the input question to generate one or more candidate answers and corresponding confidence scores;

determining, by the QA system, whether to perform the context based selection of a final answer from the one or more candidate answers based on the corresponding confidence scores;

in response to determining to not perform context based selection of the final answer, selecting, by the QA system, the final answer from the one or more candidate answers based on a ranking of the corresponding confidence scores;

in response to determining to perform context based selection of the final answer, performing, by a context based answer selection engine of the QA system, context based selection of a final answer from the one or more candidate answers based on a context of the communication exchange in which the input question is identified; and

outputting, by an output customization engine of the QA system, the selected final answer as a final answer to the input question via at least one of the first computing device or the

second computing device, wherein the context based selection comprises:

determining, by the QA system, a context of the input question;
and

selecting, by the QA system, a final answer from the one or more candidate answers based on the context of the input question, wherein the selected final answer is an answer previously provided in association with the context of the input question.

Id. at 35–36 (emphasis added).

REFERENCES AND REJECTIONS

The Examiner relies upon the following references in rejecting the pending claims:

Name³	Number	Published	Filed
Beauregard	US 2002/0156774 A1	Oct. 24, 2002	Apr. 8, 2002
Ohkuma	US 2006/0206481 A1	Sep. 14, 2006	Sep. 22, 2005
Nakazawa	US 2008/0195378 A1	Aug. 14, 2008	Nov. 19, 2007
Soderstrom	US 2008/0311934 A1	Dec. 18, 2008	Jun. 14, 2007
Schott	US 2010/0185566 A1	Jul. 22, 2010	Feb. 25, 2005
Pinckney	US 2013/0124449 A1	May 16, 2013	Jul. 12, 2012
Cudgma	US 2014/0257990 A1	Sep. 11, 2014	Feb. 26, 2014
Muto	US 2014/0289016 A1	Sep. 25, 2014	Mar. 20, 2014
Sprague	US 2015/0089568 A1	Mar. 26, 2015	Oct. 30, 2013

Claims 1, 4, 12, 15, and 23 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom, and Sprague. App. Br. 6–24. Claims 2 and 13 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom,

³ All reference citations are to the first named inventor only.

Sprague, and Nakazawa. *Id.* at 24–25. Claims 5, 6, 9, 16, 17, and 20 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom, Sprague, and Schott. *Id.* at 25–29. Claims 7 and 18 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom, Sprague, Schott, and Pinckney. *Id.* at 29. Claims 8 and 19 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom, Sprague, Schott, and Cudgma. *Id.* at 30–31. Claims 10 and 21 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom, Sprague, Schott, and Muto. *Id.* at 31–33. Claims 11 and 22 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Ohkuma, Soderstrom, Sprague, and Beauregard. *Id.* at 34.

Although Appellants contest each of the obviousness rejections separately, because we determine that the reversal of the rejection of the independent claims is dispositive, except for our ultimate decision, we do not discuss the merits of the obviousness rejections of claims 2, 4–11, 13, and 15–22 further herein. We review the appealed rejection to the independent claims for error based upon the issues identified by Appellants, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential). We address this rejection below.

ANALYSIS

1. Obviousness of Claims 1, 12, and 23 over Ohkuma, Soderstrom, and Sprague

a. Dispositive Issue

Appellants contend the Examiner erred in determining that a person of ordinary skill in the art would have had reason to combine the teachings Ohkuma and Sprague to achieve the disputed limitations recited in claim 1. App. Br. 11–12. For the reasons given below, we agree with Appellants that the Examiner erred.

b. Disputed Limitations

As noted above, claim 1 recites the steps of

determining, by the QA system, whether to perform the context based selection of a final answer from the one or more candidate answers based on the corresponding confidence scores;

in response to determining to not perform context based selection of the final answer, selecting, by the QA system, the final answer from the one or more candidate answers based on a ranking of the corresponding confidence scores;

in response to determining to perform context based selection of the final answer, performing, by a context based answer selection engine of the QA system, context based selection of a final answer from the one or more candidate answers based on a context of the communication exchange in which the input question is identified

App. Br. 35 (Claims App'x). The Examiner relies on the combined teachings of Ohkuma and Sprague to teach or suggest these limitations. Final Act. 3–4, 7–8.

The Examiner relies upon Ohkuma to teach or suggest “selecting, by the QA system, the final answer from the one or more candidate answers

based on a ranking of the corresponding confidence scores.” *Id.* at 3–4. In particular, the Examiner determines that Ohkuma discloses:

the answer candidates are ranked. In the ranking process, based on the conformity with the question type, for example, “person” is a highly reliable answer to a question of “who” and a high score is set. A high score is set for an answer of “place name” to a question of “where.” Thus, the score of the proper noun having conformity with the question type is set high. If the appearance frequency is high, the score is set high. . . . An answer candidate list of the words in the descending order of the score is generated based on the scores of the answer candidates.

Ohkuma ¶ 63; *see* Final Act. 4 (citing Ohkuma ¶¶ 63, 68). The Examiner further determines that Ohkuma teaches selecting the final answer from these candidate answers. Final Act. 3–4. Specifically, Ohkuma discloses “[t]he answer-candidate correction unit 207 *executes a narrowing process of the answer candidates* based on the numbers of hits as the search result of the check-expression search unit 206 based on the check expressions, and selects the final answer to be presented to the client.” Ohkuma ¶ 135 (emphasis added); *see id.* ¶ 150 (“the final answer is selected for output based on the numbers of hits in the search using the check expressions”).

The Examiner also relies on Ohkuma to teach or suggest “performing, by a context based answer selection engine of the QA system, *context based selection of a final answer from the one or more candidate answers* based on a context of the communication exchange in which the input question is identified.” Final Act. 4, 44; Ans. 3–4; App. Br. 35 (Claims App’x) (emphasis added). In particular, the Examiner again relies on the disclosure of Ohkuma’s paragraph 135, quoted above, to teach or suggest the “context based selection of a final answer from the one or more candidate answers,”

as recited in claim 1. Final Act. 4 (citing Ohkuma ¶ 135), 44 (citing Ohkuma ¶ 81); Ans. 3–4 (citing Ohkuma ¶ 86, Fig. 4).

Initially, we note Ohkuma does not teach that the selection of a final answer may be made either based on a ranking of the candidate answers or based on the context of the communication exchange. Instead, Ohkuma teaches that the selection of a final answer from the candidate answers is based on both the ranking and context. *See* Ohkuma, Fig. 9 (flowchart depicting both scoring candidate answers and performing content-based analysis); *see also id.* ¶¶ 81 (“The check-expression generation unit 205 is input to a question sentence from the question-sentence input unit 201 and executes a syntactic and semantic analysis process of the question sentence.”), 83 (“the syntactic analysis and the semantic analysis are absolutely necessary arts to realize applications . . . in the field of natural language process.”).

The Examiner, thus, relies upon Sprague, not Ohkuma, to teach or suggest “determining, by the QA system, whether to perform the context based selection of a final answer from the one or more candidate answers based on the corresponding confidence scores,” as recited in claim 1. Final Act. 7; Ans. 6–8. In particular, Sprague discloses “[d]evice identification scoring systems and methods may be provided that can increase the reliability and security of communications between devices and service providers.” Sprague, Abstract. Sprague discloses:

If the third party service provider determines at 226 that the calculated trust score does not pass the trust score threshold, then at 230, additional context verification tests/factors may be executed to try to increase the calculated trust score. The process 200 may iteratively execute a series of additional context verification tests/factors until the trust score threshold has been

met. For example, the initial trust score calculation at 224 may be based on one or more device IDs (e.g. software or hardware based IDs). If the third party service provider determines that the trust score threshold has not been met, then additional context verification tests may be executed and new trust scores may be computed and passed to the third party service provider until the third party service provider determines that the threshold has been met or until the session with the device has been closed.

Sprague ¶ 91 (emphasis added). Thus, Sprague teaches that *if* the calculated trust score of a particular device does not exceed a predetermined threshold, additional context-based verification tests *then* may be performed or factors considered in order to increase the trust score, so that the threshold might be met.

The Examiner concludes that a person of ordinary skill in the relevant art would have had reason to combine the teachings of Ohkuma and Sprague to achieve these disputed limitations. Final Act. 8–9; Ans. 8. In particular, the Examiner determines “[t]he motivation to combine Ohkuma and Sprague is *to improve system security by authenticating users*. It would have been obvious to one of ordinary skill in the art to take the system of Ohkuma and combine it with the authentication of Sprague in order to obtain *the predictable result of improving system security*.” Final Act. 8 (emphases added). Further, the Examiner asserts “[t]he motivation statement [of the Final Office Action] states that *the authentication of Sprague* is combined with Ohkuma *which would provide for authenticating the devices of Ohkuma. This shows how the teachings are combined*.” Ans. 8 (emphases added).

Appellants contend that the Examiner fails to demonstrate a reason for a person of ordinary skill in the relevant art to combine the teachings of Ohkuma and Sprague to achieve the recited limitations. App. Br. 17; Reply

Br. 16–17. In particular, Appellants contend that, although the Examiner relies on Sprague to teach (1) “determining . . . whether to perform the context based selection of a final answer from the one or more candidate answers based on the corresponding confidence scores” and (2) separating confidence score-based and context-based selection decisions (*see* Spec., Fig. 5 (step 535)), the Examiner relies on an unrelated reason to combine the teachings of Sprague with those of Ohkuma. As Appellants note:

If Sprague is being cited for allegedly teaching determining whether or not to perform context based selection of a final answer, even though it does not teach such, then how does that “improve system security”? In other words, the alleged motivations offered by the Final Office Action have no relevance to what the references are actually cited for allegedly teaching and in fact are merely generic allegations without any real support in the alleged combination.

App. Br. 17; *see* Reply Br. 16–17.

We agree with Appellants that the Examiner fails to provide an adequate reason supported by rational underpinnings to combine the teachings of Ohkuma and Sprague in the manner proposed. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements *in the fashion claimed by the patent at issue.*” (emphasis added)). Appellants correctly assert:

The issue is not whether Sprague teaches comparison of something to a threshold. Appellants are not claiming the general concept of comparing a value to a threshold. Appellants are specifically claiming determining whether *at least one*

confidence score of at least one candidate answer in the one or more candidate answers meets or exceeds a predetermined threshold; in response to determining that *at least one confidence score of at least one candidate answer* meets or exceeds the predetermined threshold, determining to not perform context based selection of the final answer; and in response to determining that *none of the corresponding confidence scores* meet or exceed the predetermined threshold, determining to perform context based selection of the final answer. It is these specific features that must be present in the alleged combination of teachings from the cited references, not the generic teaching of comparing something to a threshold, or even comparing a trust score to a threshold as in Sprague.

Reply Br. 16–17. Combining the teachings of Sprague regarding device authentication criteria “to improve system security” with those of the other references would not achieve the limitations of claim 1 missing from Ohkuma and Soderstrom. *See* Final Act. 7. Thus, we are persuaded the Examiner fails to demonstrate an adequate reason to combine the teachings of Ohkuma and Sprague to achieve the identified limitations, as recited in claim 1.

Consequently, we are persuaded that the Examiner erred in rejecting claim 1, as well as claims 4, 12, 15, and 23; and we do not sustain the rejection of those claims.

2. *Obviousness of Claims 2, 5–11, 13, and 16–22 over Ohkuma, Soderstrom, and Sprague in Combination with Other References*

As noted above claims 2, 5–11, 13, and 16–22 depend directly or indirectly from independent claim 1 or 12. Because the Examiner erred in rejecting claims 1 and 12, for that reason alone, we do not sustain the rejections of claims 2, 5–11, 13, and 16–22. We express no opinion on the

merits of the Examiner's findings regarding the teachings of the other applied references or of the reasons given for their proposed combinations.

CONCLUSION

The Examiner erred in rejecting:

- a. claims 1, 4, 12, 15, and 23 as unpatentable over the combined teachings of Ohkuma, Soderstrom, and Sprague;
- b. claims 2 and 13 as unpatentable over the combined teachings of Ohkuma, Soderstrom, Sprague, and Nakazawa;
- c. claims 5, 6, 9, 16, 17, and 20 as unpatentable over the combined teachings of Ohkuma, Soderstrom, Sprague, and Schott;
- d. claims 7 and 18 stand rejected as unpatentable over the combined teachings of Ohkuma, Soderstrom, Sprague, Schott, and Pinckney;
- e. claims 8 and 19 as unpatentable over the combined teachings of Ohkuma, Soderstrom, Sprague, Schott, and Cudgma;
- f. claims 10 and 21 as unpatentable over the combined teachings of Ohkuma, Soderstrom, Sprague, Schott, and Muto; and
- g. claims 11 and 22 as unpatentable over the combined teachings of Ohkuma, Soderstrom, Sprague, and Beauregard.

Thus, on this record, claims 1, 2, 4–13, and 15–23 are not unpatentable.

DECISION

For the above reasons, we reverse the Examiner's decision rejecting claims 1, 2, 4–13, and 15–23.

REVERSED