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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEPHEN J. BURGHARD, MARK TODD, PHILIP R. LEE, and ANDREW WRIGHT

Appeal 2014-009152
Application 13/246,513
Technology Center 2100

Before THU A. DANG, ERIC S. FRAHM, and NORMAN H. BEAMER, *Administrative Patent Judges*.

FRAHM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Introduction

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 6–15. Claims 1–5 have been canceled.[1] We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Exemplary Claim

Exemplary independent claim 6 under appeal, with emphasis added to the key portions of the claim, reads as follows:

> 6. A computer program product embodied in a computer readable storage medium, wherein the medium does not include a propagating signal, for developing software, the software comprising a plurality of programs, the computer program product comprising the programming instructions for:
>
> *receiving a change to a program*;
>
> invoking a *data structure* checking procedure;
>
> *parsing* the changed program for reference to a data structure;
>
> locating other instances of the data structure in other programs within the software;
>
> comparing the referenced data structure to the located other instances of the data structure;
>
> performing a predefined action in response to any detected differences between the referenced data structure and the located other instances of the data structure; and
>
> repeating said *parsing,* locating, comparing and performing for all data structures within the changed program.

[1] Claims 1–5 are the subject of related Appeal No. 2014-009281 (application serial no. 13/405,314), and are drawn to method claims which correspond substantially to the computer program product (claims 6–10) and system (claims 11–15) of the instant application on appeal.

Examiner's Rejections[2]

(1) The Examiner rejected claims 6–8 and 11–13 as being unpatentable under 35 U.S.C. § 103(a) over De Seadbra e Melo (US 2006/0168558 A1; published July 27, 2006) (hereinafter, "Melo"). Final Act. 9–13.

(2) The Examiner rejected claims 9, 10, 14, and 15 as being unpatentable under 35 U.S.C. § 103(a) over Melo and Foti (US 2007/0288892 A1; published Dec. 13, 2007). Final Act. 13–16.

Principal Issues on Appeal

Based on Appellants' arguments in the Appeal Brief (App. Br. 3–27) and the Reply Brief (Reply Br. 2–20), the following two principal issues are presented on appeal:

(1) Did the Examiner err in rejecting claims 6–8 and 11–13 as being obvious over Melo because Melo fails to teach or suggest the salient features of independent claims 6 and 11, including "receiving a change to a program" as recited in independent claims 6 and 11?

(2) Did the Examiner err in rejecting dependent claims 9, 10, 14, and/or 15 as being obvious over the combination of Melo and Foti because the combination fails to teach or suggest (i) locating data structures having "a same name," as recited in dependent claims 9 and 14; and/or (ii) detecting "a similar data structure," as recited in dependent claims 10 and 15?

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[2] The Examiner has withdrawn both the provisional obviousness-type double patenting rejection of claims 6–15 (*see* Final Act. 3–7) and the non-statutory subject matter rejection of claims 6–10 (*see* Final Act. 7–9) under 35 U.S.C. § 101. *See* Ans. 10–11. Therefore, these rejections are not before us on appeal and will not be further discussed herein.

ANALYSIS

We have reviewed the Examiner's rejections (Final Act. 9–16; Ans. 3–10) in light of Appellants' contentions in the Appeal Brief (App. Br. 3–27) and the Reply Brief (Reply Br. 2–20) that the Examiner has erred, as well as the Examiner's response (Ans. 11–24) to Appellants' arguments in the Appeal Brief. We disagree with Appellants' arguments as to claims 6–15.

We concur with the conclusions reached by the Examiner, and adopt as our own (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken (Final Act. 9–16; *see also* Ans. 3–11), and (2) the reasons set forth by the Examiner in the Examiner's Answer in response to Appellants' Appeal Brief (Ans. 11–24). We highlight and amplify certain teachings and suggestions of the references, as well as certain ones of Appellants' arguments for emphasis as follows.

Claims 6–8 and 11–13

At the outset, we note that the majority of Appellants' arguments in the briefs (*see* App. Br. 3–18; Reply Br. 2–18) regarding the obviousness rejection over Melo alone are couched in terms of Melo's failure to *teach* certain features of claims 6 and 11. The rejection of claims 6–8 and 11–13 before us on appeal is one based on obviousness, and not anticipation. And, the standard for determining obviousness is whether the prior art, *in light of the knowledge of a person of ordinary skill in the art* at the time of Appellants' invention, teaches *or suggests* the subject matter of the properly supported and construed claims. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

> Section 103(a) forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). The Examiner's "articulated reasoning" in the rejection must possess a "rational underpinning to support the legal conclusion of obviousness." *Kahn*, 441 F.3d at 988. The Supreme Court, citing *Kahn*, 441 F.3d at 988, stated that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at 418.

However, "the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* The test is "whether the overall disclosures, teachings, and suggestions of the prior art, and the level of ordinary skill in the art – i.e., the understandings and knowledge of persons having ordinary skill in the art at the time of the invention – support the legal conclusion of obviousness." *Kahn*, 441 F.3d at 988. "The teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references," and "[t]he test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *Kahn*, 441 F.3d at 987–88 (citation omitted). A claimed invention may be obvious even when the prior art does

not teach each claim limitation, so long as the record contains some reason that would cause one of skill in the art to modify the prior art to obtain the claimed invention. *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 728 (Fed. Cir. 2002). Although an analysis of the teaching, suggestion, or motivation to combine elements from prior art references is helpful, we must always be mindful that the obviousness inquiry requires an "expansive and flexible approach." *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012) (citing *KSR*, 550 U.S. at 415, 419). "Under the correct [obviousness] analysis, *any need or problem* known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *KSR*, 550 U.S. at 420 (italicized emphasis added).

In the instant case on appeal, the Examiner has provided a factual basis and articulated reasoning with a rational underpinning to support the conclusion of obviousness with regard to claims 6 and 11 (*see* Final Act. 9–13; Ans. 3–7 and 12–18). *See KSR*, 550 U.S. at 418. We agree with the Examiner's reasons for obviousness – that automated detection of conflicts is beneficial when developing software (Melo ¶ 147; Ans. 16 and 24), and it would have been obvious to perform steps recursively in order to handle a design model program that contains multiple structure elements that may have changed (And. 6 and 17). Further, we agree with the Examiner as to independent claims 6 and 11 that Melo (Fig. 1; ¶¶ 7, 12, 16, 19, 26, 28, 56, 91, 96, 145) teaches *or suggests* the salient features of independent claims 6 and 11, including "receiving a change to a program" as recited in independent claims 6 and 11.

Specifically, we agree with the Examiner (Ans. 12–18) that Melo's computer design modules and interface specifications teach or suggest *programs* as claimed (*see* ¶ 7 ("application generator . . . translates the computer design models into an actual computer software system");[3] ¶ 19 (computer design models are compared using "modules" that "can be implemented in software" or "can also be provided in the form of computer code stored in a computer-readable medium"); and Melo's "visual modeling environment" (*see* ¶ 7) is encompassed by Appellants' Integrated Development Environment (*see* Spec. 5:10–17 and 7:3–12). Paragraphs 7 (computer design models are translated "into an actual computer software system" and models include "sub-models that define how data is structured"), 19 (software implementation in the form of computer code), and 56 ("application generator **106** may be used to translate computer design models into an implementation of a computer software system") of Melo teach or suggest programs containing data structures, and paragraph 19 of Melo discloses modules are composed of software. Furthermore, one of ordinary skill in the art would understand software as containing programs or computer code, which in turn contain data structures.

We further agree with the Examiner (Final Act. 9–13; Ans. 3–7 and 12–18) that Melo (¶¶ 16 and 26) teaches or suggests detecting program changes in software by checking data structures, including using *parsing* of the changed program to locate data structures. In particular, Melo (¶ 24) discloses parsing a computer design model which is composed of a program.

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[3] Notably, Appellants have not addressed or otherwise rebutted the Examiner's reliance upon paragraph 7 of Melo.

With regard to claims 7 and 12, we agree with the Examiner (Final Act. 12; Ans. 19–20) that Melo (¶¶ 146 and 166; Fig. 15) teaches or suggests displaying differences, which is equivalent to outputting a report.

With regard to claims 8 and 13, we agree with the Examiner (Final Act. 13; Ans. 20–21) that Melo (¶¶ 27 and 91) teaches or suggests changing other instances of the data structure to match the referenced data structure.

In view of the foregoing, we sustain the obviousness rejection of claims 6–8 and 11–13 under 35 U.S.C. § 103(a) over Melo alone.

Claims 9 and 14

We agree with the Examiner (Final Act. 14–16; Ans. 7–10 and 22–24) that the combination of Melo and Foti teaches or suggests locating data structures having "a same name," as recited in dependent claims 9 and 14.

Appellants' Specification provides a specific definition of the term "data structure" that supports this understanding. Spec. 1:12–14 ("A data structure is a description of data to be found in memory that is designed as a way of storing and organizing data in a computer so that the data can be used efficiently."). In this light, Melo's software development and data structure checking procedure (*see, e.g.*, ¶¶ 12 and 91) and comparison of attributes (¶ 145), combined with Foti's "pure syntactic check" for a "same name" used to "identify identical elements" including "interface and/or properties" (¶ 52), teaches or suggests locating data structures having "a same name," as recited in dependent claims 9 and 14.

In light of our agreement with the Examiner's findings, Appellants' contention that the combination of Melo and Foti fails to *teach* (not teach or suggest in view of the knowledge of the person of ordinary skill in the art) locating data structures having "a same name," as recited in dependent

claims 9 and 14, is not persuasive. In view of the foregoing, we sustain the obviousness rejection of claims 9 and 14 under 35 U.S.C. § 103(a) over the combination of Melo and Foti.

Claims 10 and 15

We agree with the Examiner (Final Act. 14–16; Ans. 7–10 and 22–24) that the combination of Melo (*see, e.g.*, ¶¶ 12, 91, 145) and Foti (¶¶ 52 and 54; Figs. 4A and 4B) teaches or suggests detecting "a similar data structure," as recited in dependent claims 10 and 15.

In light of Appellants' own description and/or definition of "data structure" (Spec. 1:12–14 ("[a] data structure is a description of data to be found in memory that is designed as a way of storing and organizing data in a computer so that the data can be used efficiently")), we find that the combination of Melo and Foti discloses detecting "a similar data structure," as recited in dependent claims 10 and 15. Foti's identification of identical elements that include similar interfaces and/or properties (¶ 52) is encompassed by the recited detection of a similar data structure.

In light of our agreement with the Examiner's findings, Appellants' contentions that the combination of Melo and Foti fails to *teach* (not teach or suggest in view of the knowledge of the person of ordinary skill in the art) detecting "a similar data structure," as recited in dependent claims 10 and 15, are not persuasive. In view of the foregoing, we sustain the obviousness rejection of claims 10 and 15 under 35 U.S.C. § 103(a) over the combination of Melo and Foti.

CONCLUSIONS

(1) The Examiner has not erred in rejecting claims 6–8 and 11–13 as being obvious over Melo because Melo teaches or suggests the salient features of independent claims 6 and 11, including "receiving a change to a program" as recited in each of independent claims 6 and 11.

(2) The Examiner has not erred in rejection claims 9, 10, 14, and 15 as being obvious over the combination of Melo and Foti because the combination teaches or suggests (i) locating data structures having "a same name," as recited in dependent claims 9 and 14; and/or (ii) detecting "a similar data structure," as recited in dependent claims 10 and 15.

DECISION

The Examiner's rejections of claims 6–15 under 35 U.S.C. § 103(a) are 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