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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DONNA E. DILLENBERGER, SANDRA KAY JOHNSON,
JOAN MITCHELL, and DAVID WARD

Appeal 2019-002305
Application 14/876,186
Technology Center 2100

Before KARA L. SZPONDOWSKI, SCOTT B. HOWARD, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ seeks our review under 35 U.S.C. § 134(a) from a final rejection of claims 1–14. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 (2018). Appellant identifies the real party in interest as International Business Machines Corporation. Appeal Br. 1.

STATEMENT OF THE CASE

The Invention

According to the Specification, the invention concerns the “visualization of complex information using a set of navigable landmasses.” Spec. ¶ 1.² The Specification explains that a “product or solution lifecycle includes a number of phases” and that each phase “contains a plethora of information about the specific product or solution that is present in numerous knowledge repositories.” *Id.* ¶ 2. As a result, “it is often difficult to find and understand specific or related information about a product of [sic] solution, and the interactions and intra-actions between various lifecycle phases.” *Id.* Hence, the invention endeavors to provide a “visualization of complex information using a set of navigable landmasses, with specific information (e.g., source information for complex software code) associated with each landmass.” *Id.* ¶ 3.

According to the Specification, “generating a visualization of a programming code base using a set of navigable landmasses” includes (1) “representing each of a plurality of different code components using a respective landmass”; (2) “adjusting a size of each landmass based on a number of lines of code in the code component corresponding to the landmass”; and (3) “displaying the landmasses.” Spec. ¶ 4, Abstract.

² This decision uses the following abbreviations: “Spec.” for the Specification, filed November October 6, 2015; “Final Act.” for the Final Office Action, mailed May 14, 2018; “Appeal Br.” for the Appeal Brief, filed August 21, 2018; “Ans.” for the Examiner’s Answer, mailed November 27, 2018; and “Reply Br.” for the Reply Brief, filed January 28, 2019.

Exemplary Claim

Independent claim 1 exemplifies the claims at issue and reads as follows (with formatting added for clarity):

1. A method for generating a visualization of a programming code base using a visual depiction of a set of landmasses, the method comprising:

performing, on at least one computer system including a processing unit and a memory:

representing each of a plurality of different code components of the programming code base using a respective visual depiction of a landmass;

adjusting a size of each visual depiction of the landmass based on a number of lines of code in the code component corresponding to the visual depiction of the landmass;

connecting a plurality of the visual depictions of the landmasses using a number of interconnections,

wherein each interconnection includes a line connecting the interconnected visual depictions of the landmasses,

wherein the number of interconnections between each visual depiction of the plurality of landmasses reflects a level of interconnectivity between the corresponding code components of the interconnected visual depictions of the landmasses,

wherein a higher number of interconnections between each visual depiction indicates a higher level of interconnectivity between the corresponding code components of the interconnected visual depictions of the landmasses than a lower number of interconnections,

wherein interconnectivity between the corresponding code components is based upon a number of common lines of code between the code components represented by the interconnected landmasses; and

displaying the visual depictions of the landmasses and the interconnections between the visual depictions of the landmasses,

wherein each visual depiction of the landmass includes other visual depictions of other landmasses displayed within each respective visual depiction of the landmass, and

wherein a size of each other visual depiction of the other landmasses displayed within each respective visual depiction of the landmass is adjusted based on a number of lines of code in the code component corresponding to each visual depiction of the other landmasses.

Appeal Br. 19–20 (Claims App.).

The Prior Art Supporting the Rejections on Appeal

As evidence of unpatentability under 35 U.S.C. § 103(a),³ the Examiner relies on the following prior art:

Newman et al. (“Newman”)	US 5,313,615	May 17, 1994
De Pauw et al. (“De Pauw”)	US 5,592,600	Jan. 7, 1997
Burkwald et al. (“Burkwald”)	US 6,356,285 B1	Mar. 12, 2002
DeStefano	US 6,874,123 B1	Mar. 29, 2005
Charnock et al. (“Charnock”)	US 7,421,660 B2	Sept. 2, 2008 (filed Feb. 4, 2003)

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103 effective March 16, 2013. Because the effective filing date for Application 14/876,186 predates the AIA’s amendment to § 103, this decision refers to the pre-AIA version of § 103.

ANALYSIS

We have reviewed the rejections in light of Appellant’s arguments that the Examiner erred. For the reasons explained below, we disagree with the Examiner’s conclusions concerning ineligibility under § 101 and unpatentability under § 103(a). But we agree with the Examiner’s determinations regarding failure to comply with the written-description requirement and obviousness-type double patenting. We adopt the Examiner’s findings and reasoning for the § 112 and double-patenting rejections in the Final Office Action and Answer. *See* Final Act. 5–7, 31–33; Ans. 5–7, 12–13. We provide the following to address and emphasize specific findings and arguments.

The § 101 Rejection of Claims 1–14

The Patent Act defines patent-eligible subject matter broadly: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. In *Mayo* and *Alice*, the Supreme Court explained that § 101 “contains an important implicit exception” for laws of nature, natural phenomena, and abstract ideas. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012); *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014); *see Diamond v. Diehr*, 450 U.S. 175, 185 (1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent eligibility. *Mayo*, 566 U.S. at 77–80; *Alice*, 573 U.S. at 217–18.

Under *Mayo/Alice* step one, we “determine whether the claims at issue are directed to” a judicial exception, i.e., an abstract idea, a law of

nature, or a natural phenomenon. *Alice*, 573 U.S. at 217. Step one involves looking at the “focus” of the claims at issue and their “character as a whole.” *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018).

In January 2019, the PTO issued revised guidance for determining whether claims are directed to a judicial exception. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Guidance”).⁵ The 2019 Guidance applies to the Board. *Id.* at 50–51, 57 n.42; *see* 35 U.S.C. § 3(a)(2)(A) (investing the Director with responsibility “for providing policy direction” for the PTO).

Under *Mayo/Alice* step two, we “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements” add enough to transform the “nature of the claim” into “significantly more” than the judicial exception. *Alice*, 573 U.S. at 217–18, 221–22 (quoting *Mayo*, 566 U.S. at 78–79). Step two involves the search for an “inventive concept.” *Alice*, 573 U.S. at 217–18, 221; *Univ. of Fla. Research Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1366 (Fed. Cir. 2019). “[A]n inventive concept must be evident in the claims.” *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

Here, the Examiner determines that the claims are directed to an abstract idea because “one human operator can invoke/initiate commands for ‘representing’, ‘adjusting’, ‘displaying’, and steps of ‘varying’, ‘adjusting’ based on inspected or received, visually presented feedback (computer

⁵ In response to received public comments, the PTO issued further guidance in October 2019 clarifying the 2019 Guidance. October 2019 Update: Subject Matter Eligibility (Oct. 17, 2019) (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

returned data).” Final Act. 2–5; *see* Ans. 4. The Examiner also determines that the additional elements do not add enough to transform the “nature of the claim” into “significantly more” than the judicial exception. *See* Final Act. 3–5.

Appellant cites a PTO memorandum about *Berkheimer*.⁶ Appeal Br. 8–9; *see Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018). Appellant then argues that “the Examiner has failed to apply the guidelines set forth in” the *Berkheimer* memorandum for the analysis under *Mayo/Alice* step two. Appeal Br. 8–9. Based on that alleged failure, Appellant asserts that the § 101 rejection is “incomplete and/or deficient on its face.” *Id.* at 8–9.

In response, the Examiner states that Appellant’s “mention of a court case and a USPTO Guidelines amounts to disjoint introduction of facts, leading to an omission that otherwise would help one to clearly see any linking between the *Berkheimer vs HP* case with any pertinent or mandatory part of” the *Berkheimer* memorandum. Ans. 4. The Examiner also states that Appellant’s “argument that the eligibility analysis (in the Final Office Action) is being incomplete per an absence of *Berkheimer vs HP* relevancy to some guidelines is considered largely hard-to-assess and thereby deemed inconclusive.” *Id.* at 5.

We agree with Appellant that the § 101 rejection fails to apply the *Berkheimer* memorandum’s guidelines for the analysis under *Mayo/Alice* step two. *See* Final Act. 3–5; Ans. 3–5. The 2019 Guidance identifies the

⁶ PTO Memorandum, Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) (Apr. 19, 2018).

Berkheimer memorandum as applicable to the analysis under *Mayo/Alice* step two. 84 Fed. Reg. at 51 & n.6.

In particular, the *Berkheimer* memorandum explains that under *Mayo/Alice* step two “an additional element (or combination of elements) is not well-understood, routine or conventional unless the examiner finds, and expressly supports a rejection in writing with, one or more of the following”:
(1) a citation to a statement in the Specification or a statement made during prosecution; (2) a citation to a court decision; (3) a citation to a publication; or (4) a statement of official notice. *Berkheimer* Mem. 3–4. The Examiner does not support the § 101 rejection with any of those citations or a statement of official notice. *See* Final Act. 3–5; Ans. 3–5. Hence, we do not sustain the § 101 rejection of claims 1–14.

The § 112 ¶ 1 Rejection of Claims 1–14

Among other things, § 112’s first paragraph requires that the specification “contain a written description of the invention.” 35 U.S.C. § 112 ¶ 1. The written-description requirement serves to “clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (alteration in original) (quoting *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991)); *see Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016).

“[T]he test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad*, 598 F.3d at 1351; *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1296 (Fed. Cir. 2017). The “test requires an objective inquiry into the four

corners of the specification from the perspective of a person of ordinary skill in the art.” *Ariad*, 598 F.3d at 1351. While the written-description requirement “does not demand any particular form of disclosure” or “that the specification recite the claimed invention *in haec verba*, a description that merely renders the invention obvious does not satisfy the requirement.” *Id.* at 1352. The analysis for disclosure sufficiency may consider “such descriptive means as words, structures, figures, diagrams, formulas, etc.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

Independent claims 1, 7, and 13 each include the following limitation: “wherein interconnectivity between the corresponding code components is based upon a number of common lines of code between the code components represented by the interconnected landmasses.” Appeal Br. 19–20, 22, 24–25.

The Examiner finds that the Specification fails to support visually depicting “interconnectivity between the corresponding code components . . . based upon a number of common lines of code between the code components.” Final Act. 6–7; *see* Ans. 6–7. The Examiner also finds that Specification discloses using “lines of code” for adjusting a displayed landmass size and using “thread level activity” for varying a displayed interconnection characteristic. Final Act. 6 (citing Spec. ¶¶ 4–10, 21, 24, Fig. 3).

Appellant contends that the Specification discloses the following concepts: (1) “interconnected code components and their corresponding visual depiction as landmasses”; (2) “the size of landmasses as they relate to the line count of code of the code component”; and (3) “the interconnections between landmasses, ‘reflect the level of interconnectivity between the

corresponding code components.” Appeal Br. 10 (citing Spec. ¶¶ 21, 27 and quoting Spec. ¶ 23); *see* Reply Br. 8. According to Appellant, “[i]t is easily understood that the code components shown, described, and claimed by Appellant[] include lines of code, and that the interconnectivity of the code components as depicted in the claims is related to the relationship between those lines of code.” Appeal Br. 10; *see* Reply Br. 8. Further, Appellant asserts that “the originally filed claim language, which is part of the Specification, plainly recites the terms alleged by the Office to be unsupported.” Appeal Br. 10.

We agree with the Examiner that the Specification fails to support visually depicting “interconnectivity between the corresponding code components . . . based upon a number of common lines of code between the code components.” *See* Final Act. 6–7; Ans. 6–7. As the Examiner finds, the Specification discloses using “lines of code” for adjusting a displayed landmass size and using “thread level activity” for varying a displayed interconnection characteristic. *See, e.g.*, Spec. ¶¶ 4–10, 21, 23–24, Abstract; Final Act. 6.

The originally filed claims comport with the Specification. *See* Spec. 19–26. Originally filed independent claims 1, 7, and 13 recited “adjusting a size of each landmass based on a number of lines of code in the code component corresponding to the landmass.” *Id.* at 19–20, 22, 25. Originally filed dependent claims 2 and 8 recited “varying a displayed characteristic of an interconnection based on thread level activity between the code components of the interconnected landmasses.” *Id.* at 20, 23.

Appellant does not argue that “thread level activity” relates to “lines of code.” *See* Appeal Br. 10–11; Reply Br. 5–8; *see also* Final Act. 6–7.

In any event, a disclosure that “merely renders the invention obvious does not satisfy” the written-description requirement. *Ariad*, 598 F.3d at 1352.

For the reasons discussed above, Appellant’s arguments have not persuaded us that the Examiner erred in rejecting claims 1, 7, and 13 for failing to comply with the written-description requirement. Hence, we sustain the § 112 ¶ 1 rejection of claims 1–14.

The § 103(a) Rejections of Claims 1–4, 6–8, and 10–14

As noted above, the § 103(a) rejection of claims 1, 7, and 13 rests on Lieberman, DeStefano, Burkwald, Eick, Newman, De Pauw, and Charnock. *See* Final Act. 8–22, 24–27. Appellant argues that the Examiner erred in rejecting each claim because the references generally, and Newman, De Pauw, and Charnock in particular, do not teach or suggest the following limitation in each claim: “wherein interconnectivity between the corresponding code components is based upon a number of common lines of code between the code components represented by the interconnected landmasses.” *See* Appeal Br. 12–16; Reply Br. 8–13.

Specifically, Appellant asserts that the Examiner fails to “directly correlat[e] the language of the claim and the portions of” the references that “allegedly teach the feature of the pending claims.” Appeal Br. 14. Appellant also asserts that “no reference even mentions any features close to the claimed features” and, therefore, “no combination of the references can teach or suggest these features.” *Id.* at 15.

The Examiner finds that Newman teaches “inter-blocks interaction with *a line* joining each block[.]” Final Act. 14–15 (emphasis by Examiner) (citing Newman col. 15, ll. 1–14, col. 16, ll. 14–36, Figs. 1–2). In addition, the Examiner finds that De Pauw teaches “a visualizing effect of the level in

terms of *thickness* of the lines,” e.g., “*degrees of interaction.*” *Id.* at 15 (emphases by Examiner) (citing De Pauw col. 8, ll. 42–49, col. 10, ll. 29–30). Further, the Examiner finds that Charnock teaches visualizing a “frequency of interaction or communication” using color-coded lines. *Id.* (citing Charnock col. 9, ll. 21–35, col. 12, ll. 4–26, col. 13, ll. 3–12, 41–52, col. 14, ll. 17–24, 26–27, Figs. 3–5, 8–9, 12–14).

Based on the record before us, we agree with Appellant that the Examiner has not adequately explained how the cited portions of the references generally, and Newman, De Pauw, and Charnock in particular, teach or suggest the disputed “wherein” limitation. Newman discloses blocks “connected by lines” where the “interconnecting lines represent the transfer of data between the blocks.” Newman col. 16, ll. 18–21. De Pauw discloses displaying the “degrees of interaction between” nodes “as connecting lines” where the “color or thickness of these lines” indicates “the corresponding degree of interaction.” *Id.* col. 8, ll. 44–49. Charnock discloses “transaction lines” where the “color or pattern” or the “thickness of the line” indicates “the frequency of communication” or “the volume of communication.” Charnock col. 9, ll. 48–51, col. 12, ll. 21–26.

The Examiner has not adequately explained how the references teach or suggest visually depicting “interconnectivity between the corresponding code components . . . based upon a number of common lines of code between the code components” according to claims 1, 7, and 13. Hence, we do not sustain the § 103(a) rejection of claims 1, 7, and 13.

Claims 4 and 6 depend from claim 1, claims 10–12 depend from claim 7, and claim 14 depends from claim 13. For the reasons discussed for

the independent claims, we do not sustain the § 103(a) rejection of these dependent claims.

Claims 2 and 3 depend from claim 1, and claim 8 depends from claim 7. On this record, the Examiner has not shown how the additionally cited Warren reference overcomes the deficiency in the other references discussed above for claims 1, 7, and 13. Hence, we do not sustain the § 103(a) rejection of claims 2, 3, and 8.

Because these determinations resolve the appeal for the § 103(a) rejections, we need not address Appellant's other arguments regarding Examiner error. *See, e.g., Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (explaining that an administrative agency may render a decision based on "a single dispositive issue").

The Double-Patenting Rejection of Claims 1, 4, 5, 7, 9, and 10

Appellant does not contest the double-patenting rejection. *See* Appeal Br. 16. Because Appellant does not contest the double-patenting rejection, we summarily sustain that rejection. *See Hyatt v. Dudas*, 551 F.3d 1307, 1314 (Fed. Cir. 2008) (explaining that "[w]hen 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"); *see also* Manual of Patent Examining Procedure (MPEP) § 1205.02 (9th ed. rev. 08.2017 Jan. 2018) (explaining that "[a]n appellant's brief must present arguments responsive to every ground of rejection stated by the examiner in the Office action from which the appeal has been taken (as modified by any advisory action and/or pre-appeal brief conference decision)").

CONCLUSION

We reverse the § 101 rejection of claims 1–14.

We reverse the § 103(a) rejections of claims 1–4, 6–8, and 10–14.

We affirm the § 112 ¶ 1 rejection of claims 1–14.

We affirm the double-patenting rejection of claims 1, 4, 5, 7, 9, and 10.

Because we affirm at least one ground of rejection for each claim on appeal, we affirm the Examiner’s decision to reject all of the claims on appeal. *See* 37 C.F.R. § 41.50(a)(1).

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–14	101	Eligibility		1–14
1, 4, 6, 7, 10–14	103(a)	Lieberman, DeStefano, Burkwald, Eick, Newman, DePauw, Charnock		1, 4, 6, 7, 10–14
2, 3, 8	103(a)	Lieberman, DeStefano, Burkwald, Eick, Newman, DePauw, Charnock, Warren		2, 3, 8
1–14	112	Written Description	1–14	
1, 4, 5, 7, 9, 10		Double Patenting	1, 4, 5, 7, 9, 10	
Overall Outcome			1–14	

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TIME PERIOD FOR RESPONSE

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