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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LOUIS MARESCA

Appeal 2017-001639
Application 14/199,950¹
Technology Center 2100

Before MAHSHID D. SAADAT, NORMAN H. BEAMER, and
MICHAEL J. ENGLE, *Administrative Patent Judges*.

ENGLE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from a final rejection of claims 1–8, 10–20, and 22. Claims 9 and 21 were indicated as allowable by the Examiner. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

Technology

The application relates to “interfacing an application to data sources via a web service interface.” Spec. Title (capitalization omitted).

Illustrative Claim

Claim 1 is illustrative and reproduced below with certain recitations at issue emphasized:

¹ Appellant states the real party in interest is Microsoft Corp. App. Br. 1.

1. A *computer-readable medium* containing computer-executable instructions for controlling a computing device to add a web service as a data source to an application, by a method comprising:

identifying, from a universal description, discovery, and integration server, one or more web services provided by servers that are available, wherein each web service is registered with the universal description, discovery, and integration server by an available server that provides the web service;

sending to an available web service a request for a web service description language (WSDL) document describing services provided by the available web service;

after receiving a WSDL document from the available web service:

identifying, from the WSDL document, methods and parameters of the methods that implement services of the available web service;

receiving a mapping of original names of methods and parameters to display names of methods and parameters;

receiving a selection of methods from the display names and a specification of bindings of input and output parameters of the methods to data of the application contained in a data document;

storing an indication of the available web service, the received mapping of names, and the selected methods and the specified bindings as a web service profile; and

storing the web service profile as part of the data document such that the data document contains both the data of the application and the web service profile; and

updating data of the application based on the web service profile by:

sending a request to the available web service, wherein the request includes for a selected method a value of an input parameter retrieved from the data of the

application as indicated by the specified bindings for the selected method;

receiving a response from the available web service, wherein the response includes a value of an output parameter for the selected method; and

storing the received values of the output parameters as data of the application contained in the data document as indicated by the specified bindings.

Rejections

Claims 1–8, 10–22, and 22 stand rejected under 35 U.S.C. § 101 as being directed to ineligible subject matter. Final Act. 11.

Claim 22 stands rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Final Act. 17.

ISSUES

1. Did the Examiner err in concluding that under § 101 the following recitations and claims were directed to signals *per se*:
 - a. “A computer-readable medium” (claim 1);
 - b. The medium is “a storage medium” (claim 5);
 - c. The medium is “a storage device” (claim 14);
 - d. The medium is “a memory” (claim 10);
 - e. The medium is “an article of manufacture” (claim 22);
 - f. The medium is “tangible” (claims 8, 13, 17, and 20);
 - g. The medium is “not a signal” (claims 6, 11, 15, and 18);
 - h. The medium is “not a propagating signal” (claims 7, 12, 16, and 19)?
2. Did the Examiner err in finding the “article of manufacture” recited in claim 22 lacks written description under 35 U.S.C. § 112?

ANALYSIS

§ 101
(Claims 1–8, 10–20, and 22)

Claim 1, the only independent claim on appeal, recites: “A computer-readable medium containing computer-executable instructions.” The dependent claims then add further recitations to that medium, such as specifying that the medium is “a storage medium” (claim 5); “a storage device” (claim 14); “a memory” (claim 10); “an article of manufacture” (claim 22); “tangible” (claims 8, 13, 17, and 20); “not a signal” (claims 6, 11, 15, and 18); or “not a propagating signal” (claims 7, 12, 16, and 19).

The Examiner rejects claims 1–8, 10–20, and 22 under § 101 “because the claimed invention is directed to non-statutory subject matter.” Final Act. 11. In particular, the Examiner determines that under the broadest reasonable interpretation, the claims are not limited to a “non-transitory tangible medium” and instead can include a “transitory propagating signal.” *Id.*

The Federal Circuit has held that “transitory forms of signal transmission such as radio broadcasts, electrical signals through a wire, and light pulses through a fiber-optic cable are not directed to statutory subject matter.” *In re Nuijten*, 500 F.3d 1346, 1353 (Fed. Cir. 2007). More recently, a precedential PTAB decision held that, absent disclosure to the contrary in the specification, “those of ordinary skill in the art would understand the claim term ‘machine-readable storage medium’ would include signals *per se*.” *Ex parte Mewherter*, 107 USPQ2d 1857, 1862 (PTAB 2013) (precedential). “[W]here, as here, the broadest reasonable interpretations of . . . the claims . . . covers a signal *per se*, the claims must

be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter.” *Id.* at 1862; *see also Nuijten*, 500 F.3d at 1352.

In its training materials for examiners, the USPTO has said, “It is acceptable to amend the claims to exclude the signal embodiment by adding ‘non-transitory’ to modify the computer readable media.” USPTO Office of Patent Legal Administration, *Evaluating Subject Matter Eligibility Under 35 USC § 101: August 2012 Update* (“August 2012 Update”), at 14, available at http://www.uspto.gov/patents/law/exam/101_training_aug2012.pdf.

However, the training also explains, “‘Non-transitory’ is not a requirement, but simply one option” and “Applicant can choose other ways to amend the claim in accordance with the original disclosure.” *Id.* Our task today is determining whether Appellant’s “other ways” are sufficient.

In determining whether a claim is directed to signals *per se*, the specification may provide insight into the meaning of the claim terms. For example, in one recent Federal Circuit decision, “the specification defined the claimed machine-readable medium as including read-only memory, random-access memory, CDROMs, magnetic tape, optical data storage devices, *and carrier waves*.” *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1294 (Fed. Cir. 2017) (emphasis added). “Even though carrier waves differ greatly from the other disclosed mediums (such as CD-ROMs or magnetic tape), we are bound by the patentee’s lexicography.” *Id.* “Thus, the claims cover carrier signals themselves” and were “not eligible subject matter.” *Id.*

Here, both Appellant and the Examiner rely on the same paragraph of the Specification, which discloses:

The computing device on which the data source interface system is implemented may include a central processing unit, *memory*, input devices (e.g., keyboard and pointing devices), output devices (e.g., display devices), and *storage devices* (e.g., disk drives). The *memory* and *storage devices* are *computer-readable media* that may be encoded with computer-executable instructions that implement the data source interface system, which means a *computer-readable medium* that contains the instructions. In addition, the instructions, data structures, and message structures may be stored or transmitted via a data transmission medium, such as a signal on a communication link.

Spec. ¶ 19 (emphasis added). Below, we address each disputed claim term in view of this disclosure.

A) “A computer-readable medium” (claim 1)

Claim 1 recites, “A *computer-readable medium* containing computer-executable instructions . . . by a method comprising: [multiple recited method steps].” Thus, claim 1 is directed to a “computer-readable medium.”

Appellant argues that paragraph 19 of the Specification “uses the terms ‘computer-readable media’ and ‘data transmission medium’” to “distinguish [between] devices that contain instructions such as storage devices [i.e., a form of computer-readable media], and signals that can be used to transmit instructions [i.e., a form of data transmission medium].” App. Br. 5. Appellant further argues that “computer-readable medium” should be “construed as referring to things of the same kind as those specifically mentioned,” specifically a “memory” and “storage device.” *Id.* at 6 (quoting *Purdue Pharma L.P. v. Epic Pharma, LLC*, 811 F.3d 1345, 1356 (Fed. Cir. 2016)).

Here, we agree with the Examiner that “paragraph [0019] merely describes examples of what a computer-readable medium may be (e.g.,

memory, storage devices[.]” but “does not define” or “limit[] to examples provided.” Ans. 4. Thus, we are required to apply the precedential holding in *Mewherter* that “those of ordinary skill in the art would understand the claim term ‘machine-readable storage medium’ would include signals *per se*.” *Mewherter*, 107 USPQ2d at 1862. Because the “computer-readable medium” itself can be a signal *per se*, we affirm the Examiner’s rejection of claim 1.

B) “a storage medium” (claim 5)

Claim 5 depends from claim 1 and further recites “the medium is a *storage medium*.” Thus, claim 5 is directed to a “storage medium.”

Appellant provides dictionary definitions to argue that “storage” implies non-transitory holding of information. App. Br. 11–12.

As other PTAB panels have noted, a specification can provide evidence limiting a storage medium to exclude signals *per se*.² Here, however, the Specification does not use the term “storage medium.” *See* Spec. ¶ 19. Thus, as with claim 1, we are required to apply the precedential *Mewherter* holding that “those of ordinary skill in the art would understand the claim term ‘machine-readable storage medium’ would include signals *per se*.” *Mewherter*, 107 USPQ2d at 1862. Because the “storage medium” itself can be a signal *per se*, we affirm the Examiner’s rejection of claim 5.

² *E.g.*, *Ex parte Callanan*, Appeal No. 2015-004416, 2016 WL 6216631, at *3 (PTAB Oct. 14, 2016) (“While this [computer-readable storage] medium is not explicitly recited as being non-transitory, we find paragraphs 19 and 20 of Appellants’ Specification sufficiently distinguish between a hardware-based computer readable storage medium and transitory forms of a computer readable signal medium.”).

C) “a storage device” (claim 14)

Claim 14 depends from claim 1 and further recites “the medium is a *storage device*.” Thus, claim 14 is directed to a “storage device.”

Appellant argues that “the specification specifically states that a ‘storage device’ is a computer-readable medium and that a ‘signal on a communication link’ is a data transmission medium,” which creates an “explicit distinction” between a “storage device” and a “transmission medium.” App. Br. 15.

In context, however, we are not persuaded that the Specification is so “explicit.” Paragraph 19 of the Specification merely describes examples from paragraph 18’s “the data source interface system in *some* embodiments.” Paragraph 19 then explains that the computing device of such a system “may include” various components such as “memory” and “storage devices (e.g., disk drives).” The next sentence then explains: “The memory and storage devices are computer-readable media that may be encoded with computer-executable instructions that implement the . . . system.” Thus, contrary to Appellant’s argument, the Specification does not state that *all* memory and storage devices are “computer-readable media” rather than “data transmission media.” At most, paragraphs 18 and 19 merely explain that “the” sample components “in some embodiments” may be “computer-readable media.”

Moreover, there is no “explicit distinction” between a “storage device” and a “signal.” The Specification explains: “In addition, the instructions, data structures, and message structures may be *stored* or transmitted via a *data transmission medium*, such as a *signal* on a

communication link.” Spec. ¶ 19 (emphasis added). Thus, the explicit disclosure is that data may be “stored” via a signal.

Appellant also provides dictionary definitions to argue that a “storage device” requires an “apparatus” with “permanent or semipermanent” recording of data, and therefore is statutory subject matter. App. Br. 16 (quotation omitted).

The Examiner concludes that an “explicit and limiting definition as to what ‘a storage device’ is or must include is not provide[d]”; “the storage device is not necessar[il]y directed to a hardware component such as disk drives”; and “the ‘storage device’ is merely a storage medium and could be interpreted as transmission medium, as stated above.” Ans. 9.

We note that some PTAB panels have held that, absent broadening in the specification, the ordinary meaning of “device” or “storage device” would have excluded signals *per se*.³ Other PTAB panels have reached the opposite conclusion and held that, absent narrowing in the specification, the ordinary meaning of “device” would have included signals *per se*.⁴ We therefore look to the Specification for any guidance.

Here, other than the claims, the only use of the term “storage device” in the Specification discloses that “[t]he computing device . . . may include

³ *E.g.*, *Ex parte Davis*, Appeal No. 2015-006679, 2016 WL 6995171, at *3–4 (PTAB Nov. 28, 2016) (“[T]he ordinary meaning of the term device . . . does not, however, encompass a . . . ‘transitory, propagating signal’” and “the Specification has been amended to *eliminate* examples in order to avoid expanding the scope of ‘device’ *beyond its ordinary meaning*”).

⁴ *E.g.*, *Ex parte Rincon*, Appeal No. 2017-006111, 2018 WL 4356961, at *5 (PTAB Aug. 22, 2018) (“Numerous decisions of the Board similarly conclude that a recitation of ‘computer-readable storage devices’ also encompasses transitory signals, absent contrary disclosure in the specification.”).

. . . storage devices (e.g., disk drives)” and “[t]he . . . storage devices are computer-readable media that may be encoded with computer-executable instructions.” Spec. ¶ 19. As discussed above, “computer-readable media” includes signals *per se*, and “e.g.” indicates that “disk drives” are a non-limiting example of “storage devices.” Thus, other than the claims, the Specification does not impose limits on a “storage device” beyond its ordinary meaning.

The claims, however, do provide guidance as to the meaning of “storage device.” In particular, claim 15 depends from claim 14 and further recites “the storage device is not a signal.” Claim differentiation therefore suggests that claim 14 lacks the “not a signal” limitation of dependent claim 15 (i.e., that claim 14 *includes* a signal). *See Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006).

“While we recognize that the doctrine of claim differentiation is not a hard and fast rule of construction, it does create a presumption that each claim in a patent has a different scope.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998). “For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314–15 (Fed. Cir. 2005) (en banc). “This presumption is especially strong where the limitation in dispute is the only meaningful difference” between the two claims, as is the case here. *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1374 (Fed. Cir. 2014).

Appellant argues that “[t]hese dependent claims simply explicitly state what is implicit in independent claim 1” and therefore “cover substantially

the same subject matter as independent claim 1.” App. Br. 11. According to Appellant, these dependent claims “are included in the event a court would ultimately disagree with appellant’s interpretation of claim 1.” *Id.*

The Federal Circuit, however, has held that “the statute [35 U.S.C. § 112, fourth paragraph] stresses that a dependent claim must add a limitation to those recited in the independent claim. Thus, reading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid.” *Curtiss-Wright*, 438 F.3d at 1380 (citation omitted). Appellant’s argument—which would render dependent claim 15 superfluous and invalid—therefore is not persuasive in overcoming the especially strong presumption here.

Accordingly, we affirm the Examiner’s rejection of claim 14.

D) “a memory” (claim 10)

Claim 10 depends from claim 1 and further recites “the medium is a *memory*.” Thus, claim 10 is directed to a memory.

The Examiner determines that “[m]emory is not explicitly defined” and “may be properly interpreted as” (A) “a virtualized memory which is merely software *per se*” or (B) a “transmission medium” (e.g., a signal *per se*). Ans. 8. “Further, dependent claims 11-12 are claiming that the ‘memory is not a signal’ and ‘the memory is not a propagating signal’ respectively, which implies that the ‘memory’ in claim 10 could include signal[s].” *Id.*

Appellant relies on dictionary definitions to argue that “memory” is limited to “circuitry” and that “[a] claim directed to a ‘computer-readable

medium’ cannot reasonably be interpreted to cover a ‘technique’” such as “virtual memory.” App. Br. 13–14.

We agree with Appellant that a “computer-readable medium” cannot reasonably be interpreted to cover a “software per se” virtual memory. Nevertheless, we agree with the Examiner that claim differentiation from dependent claim 11 (“the memory is not a signal”) creates a rebuttable presumption that “a memory” in claim 10 can include a signal. For the reasons discussed above, Appellant has not rebutted this presumption.

Accordingly, we affirm the Examiner’s rejection of claim 10.

E) “an article of manufacture” (claim 22)

Claim 22 depends from claim 1 and further recites “the computer-readable medium is an *article of manufacture*.” Thus, claim 22 is directed to an article of manufacture.

The Examiner concludes that “‘an article of manufacture’ is given the broadest reasonable interpretation, which is directed to any item or object produced from raw or prepared materials.” Ans. 11 (citing MPEP § 2106(I)). According to the Examiner, a “[d]ata transmission medium and signal are directed to item or objects produced (i.e. article of manufacture).” *Id.*

Section 101 expressly lists a “manufacture” as a permissible form of patentable subject matter. The Supreme Court “has read the term ‘manufacture’ in § 101 in accordance with its dictionary definition to mean ‘the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery.’” *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980) (quoting *Am. Fruit Growers v. Brogdex Co.*, 283 U.S. 1, 11

(1931)); *see also Samsung Elecs. Co. v. Apple Inc.*, 137 S. Ct. 429, 435 (2016) (citing Chisum on Patents § 23.03[2] (2014)). Thus, the term “manufacture” is “used in the statute in its noun form and therefore refers to ‘articles’ resulting from the process of manufacture.” *Nuijten*, 500 F.3d at 1356 (citation omitted).

We acknowledge that some PTAB panels have held that “articles of manufacture” include signals *per se*,⁵ whereas others have held that “articles of manufacture” exclude signals *per se*.⁶ In a precedential decision, however, the Federal Circuit held that “*Nuijten*’s signals, standing alone, are not ‘manufacture[s]’ under the meaning of that term in § 101.” *Nuijten*, 500 F.3d at 1357; *see also id.* at 1356 (“These definitions address ‘articles’ of ‘manufacture’ as being tangible articles or commodities. A transient electric or electromagnetic transmission does not fit within that definition.”). We agree with the Federal Circuit that the ordinary meaning of “article of manufacture” excludes signals *per se*. Here, the Examiner has not provided sufficient explanation to deviate from that ordinary meaning in *Nuijten*.

Thus, we reverse the Examiner’s rejection of claim 22 under § 101.

⁵ *E.g.*, *Ex parte Carpio*, Appeal No. 2012-000050, 2014 WL 1370444, at *3 (PTAB Apr. 2, 2014) (“Merely labeling the storage medium as an article [of manufacture]--yet omitting the essential non-transitory language--does not guarantee that the claim only covers non-transitory media, particularly in light of Appellants’ non-limiting and open-ended description of the recited medium in the Specification.”); *Ex parte Hwang*, Appeal No. 2014-005927, 2016 WL 4240332, at *7 (PTAB Aug. 8, 2016) (citing *In re Abele*, 684 F.2d 902, 909 (CCPA 1982) as refusing to treat a claim for an “[a]pparatus for displaying data” as an apparatus claim).

⁶ *E.g.*, *Ex parte Chang*, Appeal No. 2012-008857, 2015 WL 471280, at *1 (PTAB Feb. 3, 2015) (“Because the claimed invention is directed to an article of manufacture, the claimed invention does not encompass transitory media.”).

F) “tangible” (claims 8, 13, 17, and 20)

Dependent claims 8, 13, 17, and 20 further recite that the medium is “tangible.” Thus, these claims are directed to a tangible medium.

Although we agree with Appellant (App. Br. 8) that in *Nuijten* the Federal Circuit held that signals “do not themselves comprise some tangible *article or commodity*,” the Federal Circuit also held that “such a transmission is . . . physical—it exists in the real world and has tangible causes and effects.” *Nuijten*, 500 F.3d at 1356 (emphasis added). “Moreover, any tangibility arguably attributed to a signal is embodied in the principle that it is perceptible—e.g., changes in electrical potential can be measured.” *Id.*

In its training materials, the USPTO also has stated that it is “[n]ot acceptable to just add ‘physical’ or ‘tangible’ - *Nuijten*’s ineligible signals were physical and tangible.” August 2012 Update, at 14. Many PTAB panels have reached the same conclusion.⁷

Appellant has not persuaded us the Examiner erred in determining that a “tangible” medium can be a signal *per se*. We therefore affirm the Examiner’s rejection of claims 8, 13, 17, and 20.

G) “not a signal” (claims 6, 11, 15, and 18)

Dependent claims 6, 11, 15, and 18 further recite that the medium “is not a signal.”

⁷ *E.g.*, *Ex parte Kar*, Appeal No. 2013-006312, 2015 WL 4640361, at *3 (PTAB July 29, 2015) (“The Examiner correctly concludes that ‘tangible’ encompasses physical phenomena that exist in the real world, such as transitory carrier waves or carrier signals.”).

We agree with Appellant that these claims expressly exclude signals *per se*. App. Br. 7. Although the term “non-transitory” is one way to exclude signals *per se*, it is not the only way to exclude them. See August 2012 Update, at 14.

The Examiner determines that “[t]ransmission medium such as optical fiber is used to transmit electric signal, and is considered as non-statutory subject matter.” Ans. 6–7. We agree with Appellants, however, that a fiber-optic cable is an article of manufacture, not a signal *per se*. App. Br. 7. Thus, the Examiner has not explained sufficiently why such a fiber-optic cable would be non-statutory subject matter.

Accordingly, we reverse the Examiner’s rejection of claims 6, 11, 15, and 18.

H) “not a propagating signal” (claims 7, 12, 16, and 19)

Dependent claims 7, 12, 16, and 19 further recite that the medium “is not a propagating signal.”

As with claims 6, 11, 15, and 18 (“not a signal”), the Examiner has not explained sufficiently how claims 7, 12, 16, and 19 are directed to non-statutory subject matter.

Accordingly, we reverse the Examiner’s rejection of claims 7, 12, 16, and 19.

*§ 112
(Claim 22)*

Claim 22 depends from claim 1 and further recites “the computer-readable medium is an article of manufacture.”

The Examiner rejects claim 22 under § 112, first paragraph for lack of written description because “‘article of manufacture’ is not mentioned in the

specification” and therefore should be considered “new matter.” Final Act. 17.

We agree with Appellants, however, that the Specification’s discussion of “disk drives,” for example, conveys with reasonable clarity to persons of ordinary skill in the art that the inventor was in possession of the invention being that the medium was an article of manufacture. *See App. Br. 18–19; Spec. ¶ 19.*

Accordingly, we do not sustain the Examiner’s rejection of claim 22 under § 112, first paragraph.

DECISION

For the reasons above, we affirm the Examiner’s decision rejecting claims 1–5, 8, 10, 13, 14, 17, and 20 under § 101. We reverse the Examiner’s decision rejecting claims 6, 7, 11, 12, 15, 16, 18, 19, and 22 under § 101 and claim 22 under § 112, first paragraph.

No time for taking subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See 37 C.F.R. § 41.50(f).*

AFFIRMED-IN-PART