NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

ALFONSO CIOFFI, MELANIE ROZMAN, MEGAN ROZMAN, MORGAN ROZMAN,
Plaintiffs-Appellees

v.

GOOGLE LLC,
Defendant-Appellant

2018-1049

Appeal from the United States District Court for the Eastern District of Texas in No. 2:13-cv-00103-JRG, Chief Judge J. Rodney Gilstrap.

Decided: April 18, 2023

CHRISTIAN JOHN HURT, The Davis Firm, PC, Longview, TX, argued for plaintiffs-appellees. Also represented by WILLIAM DAVIS; ERIC W. BENISEK, ROBERT MCARTHUR, Vasquez Benisek & Lindgren, LLP, Walnut Creek, CA.

ANDREW DUFRESNE, Perkins Coie LLP, Madison, WI, argued for defendant-appellant. Also represented by DAN L. BAGATELL, Hanover, NH; NATHAN K. KELLEY, Washington, DC; DAVID ALMELING, MARK LIANG, LUANN LORAINE

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Before REYNA, BRYSON, and TARANTO, *Circuit Judges.*

BRYSON, *Circuit Judge.*

The plaintiffs-appellees (collectively, "Cioffi") brought this patent infringement action against defendant-appellant Google LLC, alleging infringement of a total of four claims across three patents. Following a trial, the jury found the asserted claims to be infringed and not invalid. The district court then addressed the question whether the asserted claims were invalid under 35 U.S.C. § 251 and held that they were not. We reverse the district court's determination that the claims were not invalid.

I

A

Cioffi asserted four patent claims against Google in this case: claim 43 of U.S. Patent No. RE43,500 ("the '500 patent"); claims 5 and 67 of U.S. Patent No. RE43,528 ("the '528 patent"); and claim 49 of U.S. Patent No. RE43,529 ("the '529 patent"). Each of the asserted patents is a reissue patent of U.S. Patent No. 7,484,247 ("the '247 patent").

The asserted patents and the '247 patent are all directed to the use of multiple processors or processes in a computer system to prevent malware obtained over a network from accessing certain data stored on the computer. As the specification of the '247 patent explains, prior art computer systems would frequently run "a known and trusted set of programs" concurrently with an "Internet browser" and other programs such as "Java applets[] or EXE/COM executables." '247 patent, col. 4, ll. 60–65. Those latter programs, the specification notes, could "possibly contain[] malware." *Id.* at col. 4, ll. 65–66. When the known and trusted programs share memory and resources

with programs that may contain malware, the malware may be "capable of corrupting critical files on the shared memory storage medium." *Id.* at col. 6, ll. 56–64.

To address that problem, the '247 patent discloses "a means of isolating the network interface program [e.g., a web browser] from the main computer system such that the network interface program does not share a common memory storage area with other programs." *Id.* at col. 7, ll. 1–4. In such a system, the specification explains, "malware programs are rendered unable to automatically corrupt critical system and user files located on the main memory storage area." *Id.* at col. 7, ll. 9–11.

For purposes of this appeal, claim 49 of the '529 patent is generally representative of the asserted claims. Claim 49 depends from claim 36 of the '529 patent. Those claims recite:

> 36. A method of operating a portable computer based system employing a common operating system and configured with a first memory space and a second protected memory space and at least one electronic data processor, comprising:
>
> storing at least one system file within the first memory space;
>
> downloading website content potentially containing malware from a network of one or more computers using a secure web browser process, wherein the secure web browser process is configured to execute on the at least one electronic data processor, and comprises a first web browser process and at least one second protected web browser process, the first web browser process and the at least one second protected web browser process being configured to access the website content via the network of one or more computers;

executing instructions in the first web browser process, wherein the first web browser process is configured to access data contained in the first memory space and to initialize the at least one second protected web browser process;

passing data from the first web browser process to the at least one second protected web browser process;

executing instructions in the at least one second protected web browser process, wherein the at least one second protected web browser process is configured to access data contained in the second protected memory space and to execute instructions from the downloaded website content, wherein the downloaded website content is capable of accessing the second protected memory space but is denied access to the first memory space;

displaying digital content generated by the secure web browser process;

wherein the secure web browser process is configured such that the at least one system file residing on the first memory space is protected from corruption by website content potentially containing malware downloaded from the network and executing as part of the at least one second protected web browser process.

* * *

49. The method of claim 36 further comprising:

executing instructions from the first web browser process on a first core of a multi-core processor; and

executing instructions from the at least one second protected web browser process on a second core of the multi-core processor.

'529 patent, claims 36, 49. The asserted claims of the '500 and '528 patents are similar, although claim 43 of the '500 patent and claim 67 of the '528 patent recite a "computer program product" configured to perform certain steps rather than a method of operating a computer system.

The specification of the '247 patent discloses several embodiments that are relevant to this appeal. Figure 1 of the '247 patent depicts a computer system that contains a first processor ("P1"), a first memory ("M1"), a second processor ("P2"), and a second memory ("M2"). '247 patent, col. 9, ll. 30–47; *id.* at col. 10, ll. 29–37; *id.* at Fig. 1. In that embodiment, P1 can access the data stored in M1 and M2, while P2 can access only the data stored in M2. *Id.* at col. 10, ll. 43–58. Additionally, only P2 is used to access the network. *See id.* at col. 10, ll. 29–31. That arrangement has the effect of "isolat[ing]" P1 and M1 from the network such that malware may not "initiat[e] unwanted intrusions on [P1]." *Id.* at col. 10, ll. 40–43.

Figure 2 of the '247 patent depicts a "process flow" according to which the system of Figure 1 operates. *Id.* at col. 10, ll. 64–66. In that embodiment, a user may open a "protected process," such as a web browser program, that executes on P2. *Id.* at col. 11, ll. 2–11. Meanwhile, P1 "receives user interface data," such as keystrokes, from a user and passes that data to P2 when the protected process is active. *Id.* at col. 11, ll. 17–22. P2 then generates "video data" from the protected process and passes that data to a "video processor," which is separate from P1 and P2. *Id.* at col. 11, ll. 27–29; *id.* at Fig. 1. The video processor then "interleaves" video data from the processes being executed on P1 and P2 and transmits that data to a "video display." *Id.* at col. 11, ll. 29–33.

Figure 6 of the '247 patent depicts another exemplary process flow for the system shown in Figure 1. In that embodiment, the computer system carries out "an interactive network process, such as online gaming." *Id.* at col. 14, ll.

28–31. The user "initiates an interactive network process" via P2, and P2 "receives interactive network process status data from [the] network." *Id.* at col. 14, ll. 31–34. Next, P2 "informs [P1] that interactive network process status data is available." *Id.* at col. 14, ll. 34–36. P1 then "retrieves interactive network process status data from P2" and uses that data "to update the interactive network process and update [the] video display." *Id.* at col. 14, ll. 36–39. After that, P1 "passes the updated interactive network process status data to P2," which sends that data to the network. *Id.* at col. 14, ll. 39–42. The specification adds that P1 may be configured to accept only "game status information in the proper format, thereby minimizing the chance" that malware may be loaded onto P1 or M1. *Id.* at col. 14, ll. 50–54.

Figure 9 of the '247 patent discloses a different configuration of the computer system that is described in the specification of that patent. *Id.* at col. 16, ll. 6–8. In that configuration, the computer system contains a single processor that comprises "multiple processor cores." *Id.* at col. 16, ll. 8–12. Alternatively, the specification explains, the functions carried out by the two processors "may comprise separate, secure logical processes executing on the same physical processor." *Id.* at col. 16, ll. 22–24. In such a configuration, the first logical process "may comprise executing instructions necessary to carry out the functions of an operating system," or a computer program, "including but not limited to a word processor." *Id.* at col. 16, ll. 24–30. The second logical process "may comprise executing instructions necessary to carry out the functions of a web browser program . . . [or] an instant messenger program." *Id.* at col. 16, ll. 30–34.

B

This case has come to this court before. After the claim construction proceedings, the district court held one of the claims that is no longer at issue in the case to be indefinite,

and the parties stipulated to a judgment of non-infringement of the other asserted claims. *Cioffi v. Google, Inc.*, 632 F. App'x 1013, 1014 (Fed. Cir. 2015). In the appeal from that judgment, we reversed the district court's construction of two claim terms and remanded for further proceedings. *Id.* As relevant to this appeal, we construed the term "web browser process" to mean a "process that can access data on websites" either directly or indirectly. *Id.* at 1018–22.

C

At the trial on remand, Google argued that the asserted claims were invalid under 35 U.S.C. § 251 because the subject matter of the reissue claims was not disclosed in the original patent (in violation of the "original patent" requirement) and reclaimed subject matter surrendered during prosecution of the original patent (in violation of the "rule against recapture"). The jury found that the asserted claims were infringed and not invalid. J.A. 3922–23. Google moved for judgment as a matter of law on several issues, including non-infringement and invalidity under section 251. J.A. 3905, 3909.

After reviewing Google's post-trial submissions, the district court determined that the issue of invalidity under section 251 was for the court to decide instead of the jury. J.A. 5634–42. The court then entered an order rejecting Google's arguments on that issue, concluding that Google had failed to prove by clear and convincing evidence that the asserted claims were invalid under section 251. J.A. 70.

Google argued that the asserted claims did not satisfy the original patent requirement because the specification of the '247 patent did not clearly and unequivocally disclose an embodiment containing two "web browser processes," as recited in the asserted claims. J.A. 3913–14. The district court disagreed, finding that the disclosure of an embodiment containing "interactive network processes" in the

specification constituted a clear and unequivocal disclosure of two web browser processes. J.A. 54. In particular, the district court relied on the testimony of Dr. Hubert Dunsmore, Cioffi's expert, who explained that "those skilled in the art reading Column 14 [of the '247 patent specification] would understand that P1 and P2 can refer to two processes, both of which are accessing data from the Internet, which thus meets the Court's construction of 'web browser process.'" J.A. 21.

The district court also held that Google had not shown that the asserted claims violated the rule against recapture. J.A. 70. In a subsequent order, the court denied the remainder of Google's motion for judgment as a matter of law, including on the issue of non-infringement. J.A. 72–88. This appeal followed.

II

Google argues that the district court erred in holding that the asserted claims were not invalid under the original patent requirement and the rule against recapture. Google also argues that the district court erred in denying its motion for judgment as a matter of law that Google did not infringe the asserted claims. Because we conclude that the asserted claims are invalid under the original patent requirement, we reach only that issue.

A district court's determination of validity under 35 U.S.C. § 251 is a question of law that we review de novo. *Forum US, Inc. v. Flow Valve, LLC*, 926 F.3d 1346, 1350–51 (Fed. Cir. 2019). The legal conclusion regarding compliance with section 251, however, "can involve underlying questions of fact." *Id.* at 1351. For that reason, the court "may consider expert 'evidence to ascertain the meaning of a technical or scientific term or term of art so that the court may be aided in understanding not what the instruments mean but what they actually say.'" *Id.* (quoting *U.S. Indus. Chems. v. Carbide & Carbon Chems. Corp.*, 315 U.S. 668, 678 (1942)).

In 1893, the Supreme Court explained in *Corbin Cabinet Lock Co. v. Eagle Lock Co.*, 150 U.S. 38, 42–43 (1893), that "to warrant new and broader claims in a reissue, such claims must not be merely suggested or indicated" in the original patent, "but it must further appear from the original patent that they constitute parts or portions of the invention, which were intended or sought to be covered or secured by such original patent." In *Industrial Chemicals*, the Court expanded on that standard by noting that "[i]t must appear from the face of the instrument that was it covered by the reissue was intended to have been covered and secured by the original." 315 U.S. at 676. The Court's decision in *Industrial Chemicals* interpreted 35 U.S.C. § 64, which provided that reissue patents could be issued only for "the same invention." *Id.* at 670 n.3 (quoting 35 U.S.C. § 64 (1934)). That requirement was referred to as the "same invention" requirement. *Forum*, 926 F.3d at 1351.

In 1952, Congress amended the Patent Act to replace the phrase "the same invention" from section 64 with "the original patent." *Id.*; 35 U.S.C. § 251 (1952). The statutory language embodying the original patent requirement currently provides that the Director of the United States Patent and Trademark Office may grant a reissue patent "for the invention disclosed in the original patent." 35 U.S.C. § 251(a) (2012).

Despite the change in statutory language enacted by Congress after the Supreme Court's decision in *Industrial Chemicals*, courts have continued to apply the principles of *Industrial Chemicals* when evaluating whether a reissue claim satisfies the original patent requirement. *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354, 1360–61 (Fed. Cir. 2014) (collecting cases). In our recent cases addressing the original patent requirement, we have held that in order to satisfy the original patent requirement, the invention claimed on reissue must be "more than merely suggest[ed] or indicat[ed]" by the specification of the

original patent. *Forum*, 926 F.3d at 1351; *see also Antares*, 771 F.3d at 1362. Instead, we have explained, the specification of the original patent "must clearly and unequivocally disclose the newly claimed invention as a separate invention." *Antares*, 771 F.3d at 1362; *Forum*, 926 F.3d at 1352. That is, we have interpreted the original patent requirement to require that "the exact embodiment claimed on reissue [be] expressly disclosed in the specification." *Antares*, 771 F.3d at 1363.

Google argues that the original patent requirement is not satisfied because there is no clear and unequivocal disclosure in the '247 patent of an embodiment that comprises two web browser processes. Cioffi responds that the original patent requirement is satisfied because the embodiment disclosed in Figure 6 and column 14 of the '247 patent represents a clear and unequivocal disclosure of an embodiment having two web browser processes. As noted above, the embodiment depicted in Figure 6 contains an "interactive network process" that includes an exchange of "interactive network process status data" between P2 and P1. '247 patent, col. 14, ll. 28–45.

As Cioffi acknowledges, the specification of the '247 patent does not use the claim term "web browser process." Appellees' Br. 24. Nonetheless, Cioffi argues that "web browsing is clearly within the scope and definition of 'interactive applications' and thus the 'interactive network process' disclosed in Figure 6." *Id.* at 30. The district court accepted that general argument, holding that "the '247 Patent specification's 'interactive network processes' embodiment encompasses the dual-web-browser process limitations set forth in the Asserted Claims." J.A. 54. In support of its holding, the district court relied on the testimony of Dr. Dunsmore, who testified, in relevant part, as follows:

Q: Professor Dunsmore, let's move to [Google's expert's] second argument. Do you agree with

> [Google's expert] that the specification does not dis-
> close the use of two web browser processes?
>
> A: No, I do not.
>
> Q: Okay. . . . So, Professor Dunsmore, directing
> your attention to Column 14, Lines 28 through 45,
> why do you disagree with [Google's expert] that
> there is -- why do you disagree with his position
> that there is no disclosure of using two web browser
> processes?
>
> A: I disagree because of the things that are in --
> highlighted here. Here we have two processors, P1
> and P2. And both of them are retrieving data from
> the network, and that's exactly what needs to be
> done by the processes of a web browser.
>
> Q: And does P1 and P2 accessing website data
> meet the definition -- the Court's definition of what
> a web browser process is?
>
> A: Yes, it does.
>
> Q: So, in your opinion, Professor Dunsmore, does
> the ['247] patent specification adequately disclose
> use of -- or does it adequately disclose use of a first
> and second web browser process?
>
> A: Yes.

J.A. 5044–45.

Dr. Dunsmore's testimony essentially amounts to an
assertion that a web browser process is a type of interactive
network process because both processes "retriev[e] data
from the network." J.A. 5045. He did not state, however,
that the terms "interactive network process" and "web
browser process" are synonymous or otherwise equivalent
in meaning. Thus, Dr. Dunsmore's testimony serves to "as-
sert[] what a person of ordinary skill in the art would pur-
portedly understand" from the specification rather than

what is apparent "*from the face of the instrument.*" *See Forum*, 926 F.3d at 1351–52 (citation omitted). As we explained in *Forum*, testimony directed to the former point "is insufficient to comply with the standard set forth in *Industrial Chemicals* and *Antares.*" *Id.* at 1352.

The district court characterized Dr. Dunsmore's testimony as explaining what the disclosures in the '247 patent specification would "convey to a person of ordinary skill in the art." J.A. 52. The court further noted that Dr. Dunsmore's testimony established (1) that the term "'interactive network process' encompasses web browser processes," and (2) that the term "'interactive network process status data' encompasses 'website data.'" *Id.* But that falls short of showing that the specification of the '247 patent clearly and unequivocally discloses, on its face, the use of two web browser processes. Instead, it reflects a conclusion that a skilled artisan would be able to infer that the '247 patent specification discloses an embodiment that "encompasses" the use of two web browser processes. J.A. 54; *see also* J.A. 53. Under the standard applied by the district court, a disclosure of a broad embodiment in the original patent specification would represent a clear and unequivocal disclosure of a narrow embodiment that was not expressly described in the specification, as long as the narrow embodiment was nevertheless encompassed by the broad disclosure. That standard is more lenient than the one we have adopted in our cases applying the original patent requirement.

Turning to the '247 patent specification itself, there are three related inferences that a skilled artisan would need to draw from the Figure 6 embodiment to arrive at the embodiments recited in the asserted claims. First, a skilled artisan would have to conclude that an "interactive network process," as described in column 14 of the specification, includes web browsing. It is true that in the "Background" section, the specification states that "many applications[,] such a[s] gaming, messaging, and browsing"

may have an "interactive nature." '247 patent, col. 6, ll. 17–18. In the opening discussion of the Figure 6 embodiment, however, the only "interactive network process" that is expressly disclosed is "online gaming." *Id.* at col. 14, ll. 3–45. A skilled artisan would need to infer that the embodiment of Figure 6 could be applied to the other types of programs described in the background section of the specification.

Second, a skilled artisan would need to infer that the "interactive network process status data" described in column 14 of the '247 patent specification includes website data. According to Cioffi, one of the web browser processes recited in the asserted claims is the process running on P1 in the Figure 6 embodiment of the '247 patent. *See* Appellees' Br. 27. As the specification explains, that process "retrieves interactive network process status data from P2." '247 patent, col. 14, ll. 36–37. In order to fall within the scope of the claimed "web browser process," the process running on P1 must be capable of accessing "website data," either directly or indirectly. *Cioffi*, 632 F. App'x at 1021–22. In the context of online gaming, the specification suggests that interactive network process status data refers to "[i]nformation about the current and new state of the game [that is] exchanged between various users' computer systems." '247 patent, col. 14, ll. 10–13. The specification does not expressly indicate that interactive network process status data would be equivalent to data available on a website. A skilled artisan would need to draw the inference that the interactive network process status data discussed in column 14 of the '247 patent specification either includes or could be replaced with website data.

Third, a skilled artisan would need to an infer that a web browser process could be executed on P1 in the first place. Although not expressly disclosed with respect to Figure 6 of the '247 patent, web browsers are discussed with respect to various embodiments of the invention. For example, the specification explains that the embodiment

depicted in Figure 2 may be used to run a "protected process, such as browsing the internet." *Id.* at col. 11, ll. 9–10. That protected process is described as running on P2. *Id.* at col. 11, ll. 4–21. And the specification explains with respect to Figure 9 that "[a] second logical process may comprise executing instructions necessary to carry out the functions of a web browser program," while disclosing that other types of processes, such as an "operating system" or a "word processor," may operate as a "first logical process." *Id.* at col. 16, ll. 24–32. Notably, however, in neither case is a web browser, with its associated functions, described as being executed on P1. Thus, a skilled artisan would need to infer that it is possible to execute a web browser process on P1, particularly in view of the specification's description of such a process as "protected." *Id.* at col. 11, ll. 9–10.

To be sure, the above inferences are ones that might well be drawn by a skilled artisan after reading the '247 patent. Dr. Dunsmore testified essentially to that effect, and the district court found that testimony to be credible. However, our precedent requires more than that a skilled artisan be able to infer that the embodiment claimed on reissue was described in the specification of the original patent. There must be an "express disclosure" of the "exact embodiment claimed on reissue." *Antares*, 771 F.3d at 1363. An express disclosure of an embodiment containing two web browser processes "is exactly what was missing here," *see id.*, and the asserted claims are therefore invalid under the original patent requirement of 35 U.S.C. § 251.

Accordingly, we reverse the judgment of the district court that the asserted claims are not invalid under 35 U.S.C. § 251.

REVERSED