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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAVIKIRAN CHUKKA, GYAN PRAKASH, and RAJESH POORNACHANDRAN

Appeal 2017-009999
Application 13/991,388
Technology Center 2400

Before MICHAEL J. STRAUSS, BETH Z. SHAW, and AMBER L. HAGY, *Administrative Patent Judges.*

HAGY, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1, 4–6, 8, 9, 11–15, and 18–27, which are all of the pending claims.[2] Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word "Appellant" to refer to "Applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Intel Corporation. Appeal Br. 2.

[2] Claims 2, 3, 7, 10, 16, and 17 have been canceled by way of amendments dated June 3, 2013 (claims 7 and 10) and June 24, 2015 (claims 2, 3, 16, and 17).

CLAIMED SUBJECT MATTER

By way of background, Appellant's Specification notes the need for system administrators to be able to remotely access and manage individual devices, such as individuals' mobile devices, as part of organizational support. Spec. 1:30–34. The Specification further suggests that such remote access may be complicated by the fact that individuals' mobile devices, such as tablets, may include input mechanisms (such as a touch screens) that are not found on an administrator's desktop computer. *See id.* at 1:33–2:4. The Specification states that "[p]roviding a translation between input devices on the administrator's machine to device inputs for input devices on the individual's machine may allow the administrator to fully interact with the individual's machine." *Id.* at 2:5–7. In particular, the Specification describes:

> In an example, the translated device inputs may be transmitted to the device driver on the individual's machine, which provides device inputs for the target input device. In this way, consumers of the target device inputs (e.g., an operating system, other device drivers, etc.) are unaware that the inputs did not originate from the input device's hardware. By providing simulated device inputs in this way, administrators may interact with software and hardware components of the individual's machine in the same way the individual does. Thus, effective remote machine management may be accomplished.

Id. at 2:7–14.

Claims 1, 11, 15, and 24 are independent. Claims 1 and 11, reproduced below with disputed limitations italicized, are illustrative of the claimed subject matter:

1. A non-transitory machine readable medium including instructions that, when executed by a machine, cause the machine to perform operations comprising:

receiving, at a device driver module of a target machine, simulated device input, herein referred to as SDI, from a source machine, the SDI in a form specific to a local target input device serviced by the device driver module, the source machine being remote from the target machine;

providing the SDI, without modification, to a consumer of the device driver module; and

transmitting a representation of a graphical display of the target machine's to a graphical user interface (GUI) of the source machine including a response to the provided SDI, the GUI providing a representation of device output on the target machine and also providing an interactive input mechanism for devices of the target machine.

11. A source machine for remote device management, the source machine comprising:

a management module to:

create pass-through simulated device input for a target input device based on a source input device, a selection of the target input device received from a user of the source machine, and a local device driver for the target input device;

transmit the pass-through simulated device input to a device driver module servicing the target input device on a target machine remote from the source machine;

and

present, to the user, a representation of a graphical display of the target machine;

and

a graphical display to display a graphical user interface (GUI) including a representation of the graphical display of the target machine, the GUI providing a representation of device

output on the target machine and also providing an interactive input mechanism for devices of the target machine.

REFERENCES

The prior art relied upon by the Examiner is:

Inami	US 2007/0266234 A1	Nov. 15, 2007
Marsyla et al. ("Marsyla")	US 2008/0139195 A1	June 12, 2008
Bull et al. ("Bull")	US 2009/0284476 A1	Nov. 19, 2009
Brownlow et al. ("Brownlow")	US 2012/0159245 A1	June 21, 2012

REJECTIONS

Claims 1, 4–6, 8, 9, 11–15, and 18–27 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter (abstract idea). Final Act. 5–10.

Claims 1, 4, 8, 9, 15, 18, and 22–27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Marsyla, Bull, and Brownlow. Final Act. 10–16.

Claims 5, 6, and 19–21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Marsyla, Bull, Brownlow, and Inami. Final Act. 17–18.

Claims 11–14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Marsyla and Bull. Final Act. 18–20.

OPINION

I. § 101 Rejection[3]

The Examiner rejects all of the pending claims under 35 U.S.C. § 101 on the basis that the claimed invention is patent-ineligible because it is directed to a judicial exception without significantly more. Final Act. 5–10. Appellant argues that the claims are not directed to an abstract idea, are directed to patent-eligible subject matter, and the Examiner's rejection should be reversed. Appeal Br. 9–11. For the reasons explained below, we determine that the Examiner has not established that the claims are directed to patent-ineligible subject matter. Thus, we reverse.

A. Principles of Law

Under 35 U.S.C. § 101, an invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (citation omitted).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 75–77 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 573 U.S. at 217. The first step in the analysis is to "determine whether the claims at

[3] With regard to the Examiner's § 101 rejection, we consider claim 1 to be representative of the claimed subject matter on appeal. *See* 37 C.F.R. § 41.37(c)(1)(iv).

issue are directed to one of those patent-ineligible concepts." *Id.* For example, abstract ideas include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Id.* at 218–20. The "directed to" inquiry asks not whether "the claims *involve* a patent-ineligible concept," but instead whether, "considered in light of the specification, . . . 'their character as a whole is directed to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (internal citations omitted). In that regard, we determine whether the claims "focus on a specific means or method that improves the relevant technology" or are "directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016).

If, at the first stage of the *Alice* analysis, we conclude that the claims are not directed to a patent-ineligible concept, they are considered patent eligible under § 101 and the inquiry ends. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016).

If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to "search for an "'inventive concept'"—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* at 217–18 (brackets in original) (quoting

Mayo, 566 U.S. at 72–73). The prohibition against patenting an abstract idea "'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant postsolution activity.'" *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (internal citation omitted).

The Patent and Trademark Office (the "Office") has published revised guidance on the application of 35 U.S.C. § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50–57 (Jan. 7, 2019) ("2019 Guidance"). Under the 2019 Guidance, the Office first looks to whether the claim recites: (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and (2) additional elements that integrate the judicial exception into a practical application. *See* 2019 Guidance at 52, 54–55; *see also* MPEP § 2106.05(a)–(c), (e)–(h).[4]

Only if a claim (1) recites a judicial exception, and (2) does not integrate that exception into a practical application, does the Office then look to whether the claim: (3) adds a specific limitation beyond the judicial exception that are not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. *See* 2019 Guidance at 56. We follow this framework in our analysis herein.

[4] All references to the MPEP are to Rev. 08.2017 (Jan. 2018).

B. Application of Legal Principles

Step One of Alice

Prong 1: Whether the Claims Recite an Abstract Idea

In applying the framework set out in *Alice*, and as the first step of that analysis, the Examiner concludes claim 1 recites abstract ideas amounting to "merely using categories to organize, store and transmit information." Final Act. 5.

In challenging the Examiner's determination that the claims recite an abstract idea, Appellant argues, *inter alia*, that the "Examiner has failed to identify an abstract idea in the claim language itself," because "the Examiner misrepresented that the claims have anything to do with using categories to do anything as neither the claims nor the application discusses using categories to do anything" and "the Examiner thinks that the applicable 'abstract idea' is 'using categories to organize, store, and transmit information.'" Appeal Br. 10.

In the Answer, the Examiner clarifies that "[t]he claimed concept is using categories to organize, store and transmit information and also Remote accessing and retrieving user-specified information (Int. Ventures V. Erie Indemnity '002 patent), which the courts have found to be an abstract idea." Ans. 22 (emphasis omitted). In *Intellectual Ventures I LLC v. Erie Indemnity Co.*, 850 F.3d 1315 (Fed. Cir. 2017), the Federal Circuit agreed with the district court that the invention was "drawn to the abstract idea of 'creating an index and using that index to search for and retrieve data.'" *Id.* at 1327. The court further noted "[w]e have previously held other patent claims ineligible for reciting similar abstract concepts that merely collect, classify, or otherwise filter data." *Id.* (citing *In re TLI Commc'ns LLC*

Patent Litig., 823 F.3d 607, 611 (Fed. Cir. 2016) (noting that the concept of classifying data (an image) and storing it based on its classification is abstract under *Alice* step one); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (holding that the concept of data collection, recognition, and storage is abstract); *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1348–49 (Fed. Cir. 2016) (holding that a claim to a "content filtering system for filtering content retrieved from an Internet computer network" was directed to an abstract idea).

As we note above, the 2019 Guidance provides, as a first step, reviewing the claims to determine whether they recite any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes). 2019 Guidance at 52. The Examiner has not made findings to support characterizing the claims as directed to mathematical concepts or to purely mental processes. Rather, the Examiner's conclusion at step one is that the claims recite an abstract idea in terms of, essentially, using categories to organize, store, and access user-specified information. *See* Final Act. 5; Ans. 22. The Examiner has, however, tied the language of the claims to such an abstract idea only in terms of a "simulated device input" (which the Examiner presumably finds is user-specified information) being transmitted from a source machine to a target machine. *See id*. The Examiner's showing of an abstract idea in that regard is questionable, as any claim that recites a transfer of particular information from one location to another would be deemed to recite an abstract idea. The Examiner does not, as Appellant aptly notes, find the

claims recite organizing or classifying the data using categories, *see* Appeal Br. 10–11, nor does the Examiner explain how the claims recite collecting, classifying, and/or filtering data.

Nevertheless, we proceed to prong 2 of the analysis under the 2019 Guidance, which we consider, on the present record, to be dispositive, even if the claims were deemed to recite an abstract idea.

Prong 2: Whether the Claims Integrate the Abstract Idea into a Practical Application

In accordance with prong 2 of Step 2A of the 2019 Guidance, the claims are evaluated to determine whether they recite additional elements beyond the abstract idea, and, if so, the additional elements are evaluated to determine whether they integrate the abstract idea into a practical application. 2019 Guidance at 54. The 2019 Guidance at page 55 provides several exemplary considerations, including whether an additional element "reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field." The 2019 Guidance also highlights certain examples in which courts have held that "a judicial exception has *not* been integrated into a practical application," such as where the claims "merely use[] a computer as a tool to perform an abstract idea" or the additional element adds "insignificant extra-solution activity" to the abstract idea. *Id.* at 55.

Here, in addition to reciting receiving simulated device input by a device driver module from a source machine, claim 1 recites the elements of "providing the SDI, without modification, to a consumer of the device driver module" and "transmitting a representation of a graphical display of the target machine[] to a graphical user interface (GUI) of the source machine including a response to the provided SDI, the GUI providing a

representation of device output on the target machine and also providing an interactive input mechanism for devices of the target machine." Thus, the claim requires providing particular SDI to a device driver at a target machine in a form that allows it to be passed through to a consumer of the device driver module "without modification,"[5] and also requires displaying a response on the source machine to the provided SDI as well as providing an interactive input mechanism on the source machine for devices of the target machine.

We find the claimed invention reflects an improvement in the functioning of a computer system. *See* 2019 Guidance at 55. As Appellant asserts, and we agree, the claims "are directed to computer device driver design and manipulation" (Appeal Br. 10), in a manner that allows remote manipulation of a target machine by a source machine (*see* Spec. 1:30–2:22). Although the underlying machines (the source machine and the target machine) may not themselves be novel computing devices, the limitations of claim 1 implement the asserted abstract idea (transmission of information—the SDI) with the particular computing devices that is integral to the claim and apply or use the recited abstract idea in a meaningful way beyond generally linking the use of the abstract ideas to a particular technological environment, such that the claim as a whole is more than a drafting effort

[5] As noted *infra*, independent claim 11 does not expressly recite providing SDI "without modification," but does recite a "management module" on a source machine to create "pass-through simulated device input" and to transmit it to a "device driver module servicing the target input device on a target machine." For purposes of subject-matter eligibility, our analysis of these limitations of claim 11 is substantively the same as the "receiving" and "providing" limitations of claim 1.

designed to monopolize the exception. *See* 2019 Guidance at 55. As such, claim 1 integrates the abstract idea into a practical application and, therefore, is directed to patent-eligible subject matter. Similar reasoning applies as to independent claims 11, 15, and 24, as well as to the dependent claims.

Because we have determined that the claims do not recite a judicial exception without integrating that exception into a practical application, we do not reach the second step of the *Alice* analysis. *See* 2019 Guidance at 56.

For all of the foregoing reasons, under the 2019 Guidance, we are persuaded that the Examiner erred in concluding that the pending claims are judicially-excepted from patentability.

Accordingly, we reverse the Examiner's § 101 rejection of independent claims 1, 11, 15, and 24, as well as the Examiner's rejection of dependent claims 4–6, 8, 9, 12–14, 18–23, and 25–27, which stand or fall with the claims from which they depend.

II. § 103(a) Rejections

A. Claims 1, 4, 5, 6, 8, 9, 15, and 18–27

The Examiner finds Marsyla combined with Bull teaches most of the limitations of independent claim 1 (Final Act. 10–12), except the Examiner acknowledges that "Marsyla-Bull . . . doesn't explicitly teach . . . providing the SDI without modification to a consumer of the device driver module" (*id.* at 12). The Examiner finds "[i]n analogous art, Brownlow teaches a system that enables the unmodified device driver to be run within a lighter weight adjunct partition." *Id.*

Appellant presents at least one argument persuasively demonstrating error in the Examiner's findings as to independent claims 1, 15, and 24,

which we address below.[6] Dependent claims 4, 5, 6, 8, 9, 18–23, and 25–27 stand with their respective independent claims.

In particular, Appellant argues "the Examiner fails to discover a device driver that both services a local device for a local system and also accepts remote simulate driver input (SDI) as recited in the independent claims." Appeal Br. 13. Appellant relatedly argues "the independent claims recite the *direct passing through* of the SDI (i.e., *without modification*) to the device driver consumer[s] on the target device." *Id.* at 14 (emphases added). The Examiner does not dispute Appellant's characterization of the claims, but finds "Brownlow . . . teaches a system that enables [an] unmodified device driver to be run with in a lighter weight adjunct partition." Ans. 26 (citing Brownlow ¶ 73) (emphasis omitted).

We are persuaded of error in the Examiner's finding that Brownlow teaches or suggests "providing the SDI, without modification, to a consumer of the device driver module," as recited in claim 1 and commensurately recited in independent claims 15 and 24. As Appellant contends, and we agree, "the Examiner [has] confused an *unmodified driver* with *unmodified SDI*." Appeal Br. 15 (emphases added). Appellant further points out in its Reply that

> Brownlow discusses a virtual input-output (I/O) device that connects to a device driver on the same hardware (albeit in different virtual hosts). The purpose of this arrangement is apparently to efficiently use Linux device drivers in an AIX environment. Not only does this appear to be irrelevant to the present claims, the Examiner does not explain how using a

[6] Appellant's contentions present additional issues. Because the identified issues are dispositive of Appellant's arguments on appeal, we do not reach the additional issues.

> virtual I/O device on the target IN THE SAME HARDWARE as a source at all changes Marsyla's failure to receive pass-through SDI from the remote source machine, as recited in the claims.

Reply Br. 4 (footnote citations omitted). We agree. The Examiner finds only that Brownlow describes an "unmodified device driver" that could be used in a different environment (Ans. 25; Brownlow ¶ 73); the Examiner does not find that Brownlow's unmodified device driver would pass through the SDI "without modification" to a consumer of the device driver module.

This gap in the Examiner's findings is fatal to the Examiner's 35 U.S.C. § 103(a) rejection of each of independent claims 1, 15, and 24 over the combination of Marsyla, Bull, and Brownlow, and we, therefore, do not sustain that rejection. Dependent claims 4, 5, 6, 8, 9, 18–23, and 25–27 stand with their respective independent claims.

B. Claims 11–14

Independent claim 11 does not expressly recite the "providing the SDI, without modification" limitation as recited in claim 1, and commensurately recited in independent claims 15 and 24. Claim 11 is directed to a "source machine" that comprises a "management module" to "create pass-through simulated device input for a target input device" and to "transmit the pass-through simulated device input to a device driver module servicing the target input device on a target machine remote from the source machine."

The Examiner finds Marsyla teaches most of the limitations of claim 11, including the "pass-through simulated device input" created and transmitted by the source machine to a "device driver module servicing the target input device on a target machine remote from the source machine." *See* Final Act. 18 (citing Marsyla ¶¶ 11, 12, 93, Fig. 1). The Examiner finds

Marsyla "doesn't teach that the GUI provides a representation of device output on the target machine and also providing an interactive input mechanism for devices of the target machine," for which the Examiner relies on Bull. *Id.* at 19 (citing Bull ¶¶ 6, 7, and Fig. 1C).

Appellant argues independent claim 11 collectively with the other independent claims. Appeal Br. 13–16. As noted above, with regard to the "providing the SDI" limitation, Appellant's arguments for claims 1, 15, and 24 are chiefly premised on the recitation in those claims that the SDI is provided to a consumer of the device driver module "without modification." *See id.* Although claim 11 does not recite that same language, it does recite that a "management module" on the source machine creates "pass-through simulated device input" and transmits it to "a device driver module servicing the target input device." Thus, although differently worded than the other independent claims, claim 11 requires "simulated device input" be transmitted *from a source machine to a device driver module* servicing the target input device on a target machine.

The Examiner's findings regarding claim 11 do not clearly map these limitations of claim 11 to Marsyla. *See* Final Act. 18–19. The Examiner finds Marsyla discloses "a means for remotely testing a Mobile Device or Mobile Application while that device is located in a target Carrier Network . . . . The functions of the Mobile Device can be controlled by interacting with a local application ('Device Conductor')." *Id.* at 19 (citing Marsyla ¶¶ 11, 93, Fig. 1). The Examiner does not, however, clearly state what teaching in Marsyla corresponds to the recitation in claim 11 of "pass-through simulated device input" that is created and transmitted by the source machine to a "device driver module servicing the target input device on a

target machine." As illustrated in Figures 3–5, Marsyla's system comprises a Device Conductor that communicates over the Internet with a Device Server, which in turn passes commands to a Device Controller that operates the Mobile Device. *See* Marsyla ¶¶ 11, 12, 28. The Examiner makes no findings regarding what input is transmitted from the Device Conductor to the Device Server, or what input is transmitted from the Device Servicer to the Device Controller, etc., or how those inputs compare to each other. Nor does it appear from Marsyla's teachings that a simulated device input is being passed from a source machine to a driver module on a target machine. Rather, Marsyla's Figure 3 (Device Conductor) and Figure 4 (Device Server), for example, each contain "translation" modules, indicating that inputs are translated at each stage into different information, which is then transmitted to the next stage.

Thus, on this record, we are persuaded of error in the Examiner's finding that Marsyla teaches a "source machine for remote device management" comprising a "management module" to "create pass-through simulated device input for a target input device based on a source input device, a selection of the target input device received from a user of the source machine, and a local device driver for the target input device" and to "transmit the pass-through simulated device input to a device driver module servicing the target input device on a target machine remote from the source machine," as recited in independent claim 11. The Examiner also cites Bull in combination with Marsyla in the rejection of claim 11, but does not rely on Bull to remedy these deficiencies in Marsyla. *See* Final Act. 19.

We, therefore, do not sustain the Examiner's 35 U.S.C. § 103(a) rejection of independent claim 11. Dependent claims 12–14 stand with claim 11.

DECISION

The Examiner's rejections of claims 1, 4–6, 8, 9, 11–15, and 18–27 are REVERSED.

DECISION SUMMARY

Claims Rejected	Basis	Affirmed	Reversed
1, 4–6, 8, 9, 11–15, and 18–27	§ 101		1, 4–6, 8, 9, 11–15, and 18–27
1, 4, 8, 9, 15, 18, and 22–27	§ 103(a) over Marsyla, Bull, and Brownlow		1, 4, 8, 9, 15, 18, and 22–27
5, 6, and 19–21	§ 103(a) over Marsyla, Bull, Brownlow, and Inami		5, 6, and 19–21
11–14	§ 103(a) over Marsyla and Bull		11–14
OVERALL OUTCOME			1, 4–6, 8, 9, 11–15, and 18–27