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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOSEPH J. ROMANO JR.

Appeal 2018-000265
Application 12/192,768
Technology Center 3600

Before MURRIEL E. CRAWFORD, PHILIP J. HOFFMANN, and
KENNETH G. SCHOPFER *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant seeks our review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 1, 4, 5, 7–10, which constitute all the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellant claims a method and system for allocating requirements in a service oriented architecture using software and hardware string representation. (Spec. ¶ 2, Title).

Claim 1 is representative of the subject matter on appeal:

1. A method implemented in a computer infrastructure to provide a service oriented architecture (SOA) by correlating one or more service strings comprised of software components with one or more server groups used to execute the software components of the one or more service strings, comprising:

 assigning, by a computing device, a business process identifier to a business process stored in a storage device;

 allocating, by use of a software tool in the computing device, requirements to the business process, wherein the business process identifies software components that are used to execute the business process to satisfy the requirements;

 creating, by the computing device, one or more service strings used to provide the requirements for the business process by identifying one or more sets of services, service components, and operating systems identified by the business process as being used to execute the business process to satisfy the requirements allocated to the business process, and allocating the one or more sets of services, service components, and operating systems to the business process;

 coupling, by the computing device, each allocated service, service component, and operating system in the one or more service strings with a hardware component or hardware component group on which each identified service, service component, and operating system executes to create a hardware couple for each identified service, service component, and operating system;

 designating, by the computing device, a total set of hardware couples comprising the hardware couple created for each allocated service, service component, and operating system in the one or more service strings to create respectively one or more server groups each comprised of at least two servers selected from a web server; a process server; an enterprise serial bus server; an application server; and a database server, each server group being configured to execute the business process;

 identifying, by the computing device, common usages of same or similar service strings used amongst different business processes and storing the common usages in a storage system; and

reusing, by the computing device, at least one of the one or more service strings to create a service string for another business process that is different from the business process based on the stored common usages,

wherein the relationship between each server group and the total set of hardware couples comprising each server group is one-to-many and the relationship between each service string and each corresponding server group is one-to-one such that each service string is directly correlated with a corresponding server group,

wherein the service components comprise service oriented architecture (SOA) service components, and

wherein the business process comprises the service oriented architecture (SOA).

THE REJECTION

Claims 1, 2, 4, 5, 7-10, 13-15, 18-23, 26 and 27 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

Claims 1, 15, 22, and 23 are rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement.

Claims 1, 15, 22, and 23 are rejected under 35 U.S.C. §112, second paragraph as being indefinite.

Claim 22 is rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 7,584,282 B2; Sept. 1, 2009 to Reeves in view of US Publication No. 2006/0167665 A1; July 27, 2006 to Ata and US Publication No. 2008/0127047 A1; May 29, 2008 to Zhang.

Claims 1, 4, 5, 7-10, 15, 18, 19, 23, 26, and 27 are rejected under 35 U.S.C. §103 as being unpatentable over Reeves, Ata, Zhang and US Patent No. 7,069,509 B2; June 27, 2006 to Griffin.

Claims 13, 14, and 20 are rejected under 35 U.S.C. §103 as being unpatentable over as being unpatentable over Reeves, Griffin, Ata,

Zhang and US Publication No. 2007/0038501 A1; Feb. 15, 2007 to Lee.

ANALYSIS

35 U.S.C. § 101 REJECTION

We will sustain the rejection of claims 1–16, 18–19, and 22 under 35 U.S.C. § 101.

The Supreme Court

set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, . . . determine whether the claims at issue are directed to one of those patent-ineligible concepts. . . . If so, . . . then ask, “[w]hat else is there in the claims before us?” . . . To answer that question, . . . consider the elements of each claim both individually and “as an ordered combination” to determine whether the additional elements “transform the nature of the claim” into a patent-eligible application. . . . [The Court] described step two of this analysis as a 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.”

Alice Corp. Pty. Ltd. v. CLS Bank Int’l, 573 U.S. 208, 217-218 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72–73 (2012)) (citations omitted).

To perform this test, we must first determine whether the claims at issue are directed to a patent-ineligible concept. The Federal Circuit has explained that “the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the [S]pecification, based on whether ‘their character

as a whole is directed to excluded subject matter.” *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). It asks whether the focus of the claims is on a specific improvement in relevant technology or on a process that itself qualifies as an “abstract idea” for which computers are invoked merely as a tool. *See id.* at 1335–36.

In so doing we apply a “directed to” two prong test: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the judicial exception is integrated into a practical application. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 FR 50, pp 50–57 (Jan. 7, 2019) (“*Guidance*”). The Examiner determines that the claims are directed to allocation of business processes by grouping software with hardware. According to the Examiner, a human could group hardware and software components mentally or on paper. (Final Act. 2–3). The Examiner also determines that the claims recite steps for allocating requirements to a business process by storing information and using rules implemented by strings to create more rules for strings. (Final Act. 8).

The Specification discloses that service oriented architecture allows different applications to exchange data with one another as they participate in a business process. The process of communication may involve simple data passing or two or more services coordinating some activity. (Spec. ¶ 3). Services are intrinsically unassociated units of functionality which have no calls to each other embedded in them but rather protocols are defined which describe how one or more services can talk to each other. This architecture then relies on a business process expert to link and sequence services, in a

process known as orchestration, to meet the new and existing business system requirement. (Spec. ¶5). In the present invention, programming instructions are operable to create one or more service strings used to provide requirements for the business process, wherein each service string identifies software components used to execute the business process and operable to create one or more hardware strings for the business process. (Spec. ¶9). Service strings are used to provide the requirements for the business process and allocate requirements to the business process. In addition, programming instructions are operable to create one or more hardware strings for the business process, where in each hardware string identifies hardware components used to execute the business process. The Specification also discloses that the determination of requirements of a business process may be performed manually by an orchestrator who may then input the requirements of a business process into the system of the present invention via a business requirements allocation tool. (Spec. ¶39).

As such, the Specification teaches that the invention is about linking and sequencing services and hardware. At least a portion of the process is disclosed as being able to be performed by a human mind. (Spec. ¶39). Appellant characterizes the invention as “making decisions regarding allocating requirements in a service oriented architecture (SOA) to all software and hardware involved in each requirement with groupings which provide requirements, allocations and traceability for a SOA system.” (Appeal Br.12). The process of making decisions regarding allocating requirements in a service oriented architecture involves evaluation and judgment and therefore is a process that can be done in the human mind. *Guidance*, 84 Fed. Reg. at 52.

The steps of claim 1 also support this determination by reciting “assigning . . . a business process identifier to a business process,” and “allocating . . . requirements to the business process,” “creating . . . one or more service strings used to provide the requirements for the business process.” These steps of claim 1 constitute “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016); *see also buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (claims directed to certain arrangements involving contractual relations are directed to abstract ideas).

Thus, we find that the claims recite a judicial exception of a concept that can be performed in the human mind.

Turning to the second prong of the “directed to test”, claim 1 merely requires “a computer infrastructure,” “a computing device,” a “software tool,” and “server groups.” These recitations do not impose “a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *Guidance*, 84 Fed. Reg. at 53 We find no indication in the Specification, nor does Appellant direct us to any indication, that the operations recited in independent claim 1 invoke any inventive programming, require any specialized computer hardware or other inventive computer components, i.e., a particular machine, or that the claimed invention is implemented using other than generic computer components to perform generic computer functions. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) (“[A]fter *Alice*, there can remain no doubt: recitation of generic

computer limitations does not make an otherwise ineligible claim patent-eligible.”).

We also find no indication in the Specification that the claimed invention effects a transformation or reduction of a particular article to a different state or thing. Nor do we find anything of record, short of attorney argument, that attributes any improvement in computer technology and/or functionality to the claimed invention or that otherwise indicates that the claimed invention integrates the abstract idea into a “practical application,” as that phrase is used in the revised Guidance. *See Guidance*, 84 Fed. Reg. at 55.

In this regard, the recitations do not affect an improvement in the functioning of a computer or other technology, do not recite a particular machine or manufacture that is integral to the claims, and do not transform or reduce a particular article to a different state or thing. *Id.* Thus, claim 1 is directed to a judicial exception that does not integrate the judicial exception into a practical application, and thus, is an “abstract idea.”

Turning to the second step of the *Alice* analysis, because we find that claim 1 is directed to an abstract idea, the claim must include an “inventive concept” in order to be patent-eligible, i.e., there must be an element or combination of elements that is sufficient to ensure that the claim in practice amounts to significantly more than the abstract idea itself. *See Alice*, 573 U.S. at 217–18 (alteration in original) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72–73 (2012)).

The introduction of a computer into the claims does not alter the analysis at *Alice* step two.

[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. Stating an abstract idea “while adding the words ‘apply it’” is not enough for patent eligibility. Nor is limiting the use of an abstract idea “to a particular technological environment.” Stating an abstract idea while adding the words “apply it with a computer” simply combines those two steps, with the same deficient result. Thus, if a patent’s recitation of a computer amounts to a mere instruction to “implemen[t]” an abstract idea “on . . . a computer,” that addition cannot impart patent eligibility. This conclusion accords with the preemption concern that undergirds our § 101 jurisprudence. Given the ubiquity of computers, wholly generic computer implementation is not generally the sort of “additional featur[e]” that provides any “practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself.”

Alice, 573 U.S. at 223 (alterations in original) (citations omitted).

Instead, “the relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer.” *Id.* at 225. They do not.

Taking the claim elements separately, the functions performed by the computer, including the server groups and the software tool, at each step of the process are purely conventional. Using a computer to retrieve, select, and apply decision criteria to data and modify the data as a result amounts to electronic data query and retrieval—one of the most basic functions of a computer. All of these computer functions are well-understood, routine,

conventional activities previously known to the trading industry. *See Elec. Power Grp.*, 830 F.3d at 1354; *see also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (“Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ . . . those functions can be achieved by any general purpose computer without special programming”). In short, each step does no more than require a generic computer to perform generic computer functions.

Considered as an ordered combination, the computer components of Appellant’s claims add nothing that is not already present when the steps are considered separately.

The claims do not, for example, purport to improve the functioning of the computer, the software tool, or the server groups themselves. As we stated above, the claims do not affect an improvement in any other technology or technical field either. The Specification spells out different generic equipment and parameters that might be applied using this concept and the particular steps such conventional processing would entail based on the concept of information access under different scenarios. (*See, e.g.*, Spec. ¶¶ 22–26, 30, and 32). Thus, the claims at issue amount to nothing significantly more than instructions to apply the abstract idea of information access using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 226.

We have reviewed all the arguments (Appeal Br. 13–26; Reply Br. 3–10) Appellant has submitted concerning the patent eligibility of the claims before us that stand rejected under 35 U.S.C. § 101. We find that our analysis above substantially covers the substance of all the arguments, which

have been made. But, for purposes of completeness, we will address various arguments in order to make individual rebuttals of same.

We are not persuaded of error on the part of the Examiner by Appellant's argument that the claims are directed to resolving problems in a technological area similar to the solutions to problems in the technological area provided in *BASCOM Global Internet Servs. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016). (Brief 10). Appellant argues that the present claims are clearly a computer related technological area and are directed to a very specific area of technology i.e., specific hardware elements selected to implement the service strings. (Brief 10, 12; Reply Brief 6).

Contrary to Appellant's arguments, the Federal Circuit did not find that the claims in *BASCOM* recited an inventive concept because the claims recited a specific area of technology. Rather, in *BASCOM*, the Federal Circuit followed the Supreme Court's guidance for determining whether the claims recite an inventive concept set forth in *Alice Corp. Pty. Ltd. v. CLS Bank International*, 573 U.S. at 217–18.

In *Alice*, the Supreme Court explained that, under the second step of the patent-eligibility analysis, the relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea of intermediated settlement on a generic computer at 573 U.S. at 217. The Supreme Court also provided examples of claims that represent more than instructions to implement an abstract idea on a generic computer, such as claims that purport to improve the functioning of the computer itself and claims that effect an improvement in any other technology or technical field. *Id.* at 217–18.

Turning to *BASCOM*, the Federal Circuit held “[t]he inventive concept described and claimed in the '606 patent is the installation of a filtering tool at a specific location, remote from end-users, with customizable filtering features specific to each end user.” 827 F.3d at 1350. In determining this feature to be an inventive concept, the Federal Circuit explained that the remote location of a filtering tool having customizable user-specific filtering features provides the filtering tool both the benefits of a filter on a local computer and the benefits of a filter on the ISP server and is a technical improvement over prior art ways of filtering content. *Id.* at 1350-51. Notably, the Federal Circuit specifically determined that “the claims may be read to ‘improve[] an existing technological process.’” *Id.* at 1351 (citing *Alice*, 134 S. Ct. at 2358).

There is no improvement to the technology recited in claim 1. As we found above, the functioning of the computer, the software tool and the server groups themselves are not improved in the process recited in claim 1.

We are not persuaded of error on the part of the Examiner by Appellant arguments that the invention of claim 1 provides an unconventional solution of problems in SOA systems. (Brief 39). To the extent Appellant maintains that the limitations of claim 1 necessarily amount to “significantly more” than an abstract idea because the claimed method is allegedly unconventional or novel, Appellant misapprehends the controlling precedent. Although the second step in the *Alice/Mayo* framework is termed a search for an “inventive concept,” the analysis is not an evaluation of novelty or non-obviousness, but rather, a search for “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.” *Alice*, 573 U.S. at 217. A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 566 U.S. at 90.

We are not persuaded of error on the part of the Examiner by Appellant’s argument that the claims cannot be performed in the human mind because the claims recite a software tool and therefore are not performed in the human mind. If a claim, under its broadest reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental process category unless the claim cannot practically be performed in the mind. *See Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1316 (Fed. Cir. 2016). We find that in the instant case, with the exception of the recitation of a generic computing device and generic servers, there is nothing in claim 1 that forecloses the method from being performed by the human, mentally or with pen and paper. *See Mortg. Grader, Inc. First Choice Loan Servs. Inc.*, 811 F.3d. 1314, 1324 (Fed. Cir. 2016). In fact, the Specification even discloses that the invention can be performed by a business process expert or a human orchestrator (Spec. 5, 39).

We are not persuaded of error on the part of the Examiner by Appellant’s argument that the claims are related to creation of hardware server groups that are actual physical hardware servers and not some abstract business practice or mathematical formula. Claim 1 recites that server groups are created by “designating, by computing device, a total set of hardware couples comprising the hardware couple created for each allocated service, service component, and operating system in one or more service strings.” We agree with the Examiner that claim 1 merely designates

hardware and software combinations to perform services. (Ans. 5). There is no actual creation of hardware recited in claim 1. In keeping with our findings above, the *designation* of server groups can be done in the human mind.

We are not persuaded of error on the part of the Examiner by Appellant's argument that claim 1 is directed to a solution of a problem which specifically arises in computer technology analogous to the claims in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). Reply Br. 6–7. In *DDR*, the Court evaluated the eligibility of claims “address[ing] the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host's website after ‘clicking’ on an advertisement and activating a hyperlink.” *DDR*, 773 F.3d at 1257. There, the Court found that the claims were patent eligible because they transformed the manner in which a hyperlink typically functions to resolve a problem that had no “pre-Internet analog.” *Id.* at 1258. The Court cautioned, however, “that not all claims purporting to address Internet-centric challenges are eligible for patent.” *Id.* For example, in *DDR* the Court distinguished the patent-eligible claims at issue from claims found patent-ineligible in *Ultramercial*. See *DDR*, 773 at 1258–59 (citing *Ultramercial*, 772 F.3d 709, 715–16 (Fed. Cir. 2014)). As noted there, the *Ultramercial* claims were “directed to a specific method of advertising and content distribution that was previously unknown and never employed on the Internet before.” *Id.* at 1258 (quoting *Ultramercial*, 772 F.3d at 715–16). Nevertheless, those claims were patent ineligible because they “merely recite[d] the abstract idea of

‘offering media content in exchange for viewing an advertisement,’ along with ‘routine additional steps such as updating an activity log, requiring a request from the consumer to view the ad, restrictions on public access, and use of the Internet.’” *Id.*

Appellant’s asserted claims are analogous to claims found ineligible in *Ultramerical* and distinct from claims found eligible in *DDR*. The ineligible claims in *Ultramerical* recited “providing [a] media product for sale at an Internet website;” “restricting general public access to said media product;” “receiving from the consumer a request to view [a] sponsor message;” and “if the sponsor message is an interactive message, presenting at least one query to the consumer and allowing said consumer access to said media product after receiving a response to said at least one query.” *Ultramerical*, 772 F.3d at 712. Similarly, Appellant’s asserted claims recite receiving, analyzing, modifying, and transmitting data. This is precisely the type of Internet activity found ineligible in *Ultramerical*. As such, we agree with the Examiner that determining which resources are needed or required to perform business services is not a process that is inherently rooted in computer technology. (Ans. 6).

In view of the foregoing, we will sustain this rejection of claim 1. We will also sustain the rejection as it is directed to the remaining claims because the Appellant does not argue the separate eligibility of these claims.

REJECTION UNDER 35 U.S.C. §112, FIRST PARAGRAPH

The Examiner rejected the claims as lacking written description support because the phrase “server groups” is not found in the Specification. (Final Act. 10).

The test for written description under 35 U.S.C. § 112, first paragraph, “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 Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). “[T]he written description requirement does not demand either examples or an actual reduction to practice; a constructive reduction to practice that in a definite way identifies the claimed invention can satisfy the written description requirement.” *Id.* at 1352. Instead, we evaluate the adequacy of written description in view of the “the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, [and] the predictability of the aspect at issue.” *Id.* at 1351.

We will not sustain this rejection because we agree with the Appellant that Figure 4 and paragraph 52 of the Specification describe a group of hardware strings that comprise a group of servers, i.e., a web server, a process server, an enterprise serial bus server, an application server and a database server. As the Specification discloses that a hardware string comprises a group of servers, we find that the Specification provides support for the claimed “server group.” In addition, claim 1 also confirms this finding by reciting that the server group comprises a web server, a process server, an enterprise serial bus server, an application server and a database server, to carry out the SOA business process recited in claim 1.

REJECTION UNDER 35 U.S.C. §112, SECOND PARAGRAPH

The Examiner finds that it is unclear what constitutes a “server group” and how one would create a “server group.” We agree with the Appellant

that in view of the disclosure in the Specification discussed in our analysis of the rejection under the first paragraph of 35 U.S.C. §112, first paragraph, the disclosure at paragraph 62 along with the recitations of claim 1 clearly disclose that the server groups are created by designating hardware couples in one or more service strings. As such, we will not sustain this rejection.

REJECTION UNDER 35 U.S.C. §103(a)

We will not sustain this rejection because we agree with the Appellant that the prior art does not disclose “designating. . . hardware couples . . . to create . . . one or more server groups,” as recited in claim 1. The Examiner relies on column 5, lines 23–38 of Reeves for teaching this subject matter. (Final Act. 18–19). Column 5, lines 23–38 of Reeves discloses that a directory service is created by grouping map objects and managed elements according to their logical and/or physical relationships. A first office may contain several servers, SANs, racks, and/or switches and the directory service maps the hardware and software elements. While this disclosure does discuss several servers, there is no disclosure that these servers form a “server group,” and certainly no disclosure that hardware couples in one or more service strings are designated to create one or more server groups.

We will likewise not sustain this rejection as it is directed to the remaining claims because each of the remaining claims includes this subject matter we have found missing in Reeves.

CONCLUSIONS OF LAW

We conclude the Examiner did not err in rejecting the appealed claims under 35 U.S.C. § 101.

We conclude that the Examiner did err in rejecting the appealed claims under 35 U.S.C. §112, first paragraph and second paragraph, and under 35 U.S.C. §103(a).

DECISION

The decision of the Examiner to reject claims 1, 4, 5, 7–10, 13–15, 18–23, 26, and 27 under 35 U.S.C. §101 is affirmed.

The decision of the Examiner to reject claims 1, 15, 22, and 23 under 35 U.S.C. § 112, first paragraph is not affirmed.

The decision of the Examiner to reject claims 1, 15, 22, and 23 under 35 U.S.C. §112, second paragraph is not affirmed.

The decision of the Examiner to reject claims under 35 U.S.C. § 103(a) is not affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED