UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/809,835	01/11/2013	Young Sook Hwang	4900-0095	1797

26181   7590   03/22/2018
FISH & RICHARDSON P.C. (SV)
PO BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER
SAINT CYR, LEONARD

ART UNIT	PAPER NUMBER
2658	

NOTIFICATION DATE	DELIVERY MODE
03/22/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

§UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YOUNG SOOK HWANG, SANG-BUM KIM,
CHANG HAO YIN, ZHIYANG WANG, QUN LIU, and
YAJUAN LV

Appeal 2017-007960
Application[1] 13/809,835
Technology Center 2600

Before JOSEPH L. DIXON, JAMES R. HUGHES, and
JOHNNY A. KUMAR, *Administrative Patent Judge.*

KUMAR, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) of the
Examiner's Non-Final Rejection of claims 1, 3–18, which are all the claims
pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.[2]

---

[1] According to Appellants, the real party in interest is SK Planet Co., LTD.
Br. 2.
[2] Our Decision refers to Appellants' Appeal Brief ("Br.") filed October 28,
2016; Examiner's Answer ("Ans.") mailed January 27, 2017; Non-Final
Office Action ("Non-Final Act.") mailed July 14, 2016; and original
Specification ("Spec."), filed January 11, 2013.

STATEMENT OF THE CASE

Appellants' invention relates to a "method and a device for filtering a translation rule and generating a target word in a hierarchical phrase-based statistical machine translation." Abstract.

Claim 1 illustrates Appellants' invention, as reproduced below:

1. A method of filtering a translation rule, the method comprising:

reducing a hierarchical phrase-based translation rule of both of a source language side and a target language side, using a relaxed-well-formed dependency structure,

wherein the reducing comprises removing translation rules which do not satisfy the relaxed-well-formed dependency structure, and

wherein the relaxed-well-formed dependency structure is $w\_i \ldots \ldots w\_j$, and satisfies following conditions of:

(1) $d\_h \notin [i,j]$ and

(2) $\forall k \in [i, j], d\_k \in [i, j]$ or $d\_k = h,$

where h=-1.

Br. 25 (Claims App'x).

Examiner's Rejections

Claims 1 and 3–18 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1 and 3–18 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Toutanova et al. (US 2008/0319736 A1, Dec. 25,

2008) (hereinafter "Toutanova") in view of Shen, Libin, et al. (*A New String-to-Dependency Machine Translation Algorithm with a Target Dependency Language Model,* 2008, pp. 577-585) (hereinafter "Shen").

Issues on Appeal

Did the Examiner err in rejecting claim 1 as being directed to judicially excepted subject matter?

Did the Examiner err in rejecting claim 1 as being obvious?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' arguments (Appeal Brief) that the Examiner has erred.

1.   Rejection under § 101

In *Alice Corp. Pty. Ltd. v. CLS Bank International,* 134 S. Ct. 2347 (2014), the Supreme Court reiterates an analytical two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.,* 566 U.S. 66, 79 (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,* 134 S. Ct. at 2355. The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," such as an abstract idea. *Id.* 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." *Id.* (citing *Mayo,* 566 U.S. at 78–79). 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.* (citing *Mayo*, 566 U.S. at 72–73).

In rejecting independent claims 1, 5, 7, 10, 12, and 13 and their dependent claims under 35 U.S.C. § 101, the Examiner finds these claims are directed to an abstract idea of "mathematically [of] converting a source language text to a target language text using a translation rule generated by a relaxed-well-formed dependency structure." Non- Final Act. 2; Ans. 20.

We agree with the Examiner that claims 1, 5, 7, 10, 12, and 13 are directed to the abstract idea of manipulating data through mathematical relationships, which is similar to the computing formula discussed in *Parker v. Flook*, 437 U.S. 584 (1978), and the Arrhenius formula in *Diamond v. Diehr*, 450 U.S. 175 (1981).

Furthermore, information as such is intangible, and data analysis and algorithms are abstract ideas. *See, e.g., Microsoft Corp. v. AT & T Corp.*, 550 U.S. 437, 451 n.12 (2007); *Alice*, 134 S. Ct. at 2355; *Flook*, 437 U.S. at 589, 594–95 ("Reasoning that an algorithm, or mathematical formula, is like a law of nature, *Benson* applied the established rule that a law of nature cannot be the subject of a patent."); and *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972). Information collection and analysis, including when limited to particular content, is within the realm of abstract ideas. *See, e.g., Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1349 (Fed. Cir. 2015); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014); and *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011). That is, "[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate existing

information to generate additional information is not patent eligible."
Digitech, 758 F.3d at 1350, 1351 ("Data in its ethereal, non-physical form is simply information that does not fall under any of the categories of eligible subject matter under section 101").

We further note all the steps of Appellants' claim 1 (and similarly method claims 5, 7, and 10) are abstract mathematical concepts and algorithms that could be performed in the human mind, or by a human using a pen and paper, without need of any computer or other machine. *See CyberSource*, 654 F.3d at 1373 ("[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101."); *see also In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009) ("[M]ental processes—or processes of human thinking—standing alone are not patentable even if they have practical application."); *Benson*, 409 U.S. at 67 ("Phenomena of nature . . . , *mental processes*, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work" (emphasis added)). Additionally, mental processes remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *CyberSource*, 654 F.3d at 1375 ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").

Under step two of the *Alice* framework, the Examiner finds the claims do not:

> The additional element(s) or combination of elements in the claim(s) other than the abstract idea per se amount(s) to no more than: generating a hierarchical phrase-based translation rule using a relaxed-well-formed dependency structure of a source language side and a

5

target language side, which are mere instructions to implement the
idea on a computer, and/or are generic computer functions that are
well-understood, routine, and conventional activities previously
known to the pertinent industry.

Non-Final Act. 5.

We find that the additional limitations, taken individually and as a
whole in the ordered combination, do not add significantly more to the
abstract idea of manipulating data through mathematical relationships or
transform the abstract idea into a patent-eligible application. *Alice*, 134 S.
Ct. at 2357. "[T]he use of generic computer elements like a microprocessor
or user interface do not alone transform an otherwise abstract idea into
patent-eligible subject matter." *FairWarning IP, LLC v. Iatric Sys., Inc.*,
839 F.3d 1089, 1096 (Fed. Cir. 2016) (citing *DDR Holdings, LLC, v.
Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014)); *see also
Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014)
(claims merely reciting the abstract idea of using advertising as currency as
applied to particular technological environment of the Internet are not patent
eligible); *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728
F.3d 1336, 1344–45 (Fed. Cir. 2013) (claims reciting "generalized software
components arranged to implement an abstract concept [of generating
insurance-policy-related tasks based on rules to be completed upon the
occurrence of an event] on a computer" are not patent eligible); and
Dealertrack, Inc. v. Huber, 674 F.3d 1315, 1333–34 (Fed. Cir. 2012)
("[s]imply adding a 'computer aided' limitation to a claim covering an
abstract concept, without more, is insufficient to render [a] claim patent
eligible").

Regarding apparatus claims 12 and 13, we adopt as our own the

findings and reasons set forth by the Examiner on pages 5 and 6 of the Non-Final Action.

Thus, we find nothing in claims 1, 3–18 adds anything "significantly more" to transform the abstract concept of "mathematically converting a source language text to a target language text" into a patent-eligible application. *Alice*, 134 S. Ct. at 2357.

Lastly, Appellants argue that the *applied prior art fails to teach or suggest* features of claim 1 which provide

> an improvement to the functioning of the computer itself. Accordingly, one of ordinary skill in the art would recognize that the currently recited features of claim 1 include at least one specific limitation other than what is well-understood, routine, and conventional in the field, and thus, claim 1 recites *significantly more* than an abstract idea.

Br. 13.

We do not agree. The second step of the *Alice* inquiry is to "search for an 'inventive concept.'" According to the Federal Circuit, an "inventive concept" sufficient to "transform" the claimed "abstract idea" into a patent-eligible application under the second step of the *Alice* inquiry can be established in several ways, including:

> (1)   in *DDR*, an "inventive concept" is found because *DDR's* claims (i) do not merely recite "the performance of some business practice known from the pre-Internet world" previously disclosed in *Bilski* and *Alice*, and instead (ii) provide a technical solution to a technical problem unique to the Internet, i.e., a "solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks,"

DDR, 773 F.3d at 1257;

(2)   in *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC,* 827 F.3d 1341 (Fed. Cir. 2016), an "inventive concept" is found because *Bascom's* claims, when considered as "an order combination," "transform the abstract idea of filtering content into a particular, practical application of that abstract idea," i.e., "installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user,"

Bascom, 827 F.3d at 1350, 1352; and

(3)   in *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.* 841 F.3d 1288 (Fed. Cir. 2016), an "inventive concept" is found because, like *DDR* and *Bascom, Amdocs'* claims "entail[] an unconventional solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)" and "improve the performance of the system itself,"

Amdocs, 841 F.3d at 1302.

However, in contrast to the claims in *DDR, Bascom,* and *Amdocs,* Appellants' claimed invention does not include any "inventive concept" and only recites a series of steps of "manipulating data through mathematical relationships."

Because Appellants' claims 1, 3–18 are directed to a patent-ineligible abstract concept under *Alice* step 1, and do not recite something "significantly more" under *Alice* step 2, we sustain the Examiner's rejection of these claims under 35 U.S.C. § 101 as being directed to judicially excepted subject matter in light of *Alice* and its progeny.

2. Other 101 Arguments

Appellants contend that

when determining whether claims are patentable under 35 U.S.C. § 101, "[e]very claim must be examined individually, based on the

> particular elements recited therein, and should not be judged to automatically stand or fall with similar claims in an application."
> 2014 Interim Guidance on Patent Subject Matter Eligibility, 79 Fed. Reg. 74618, 74624 (Dec. 16, 2014).
> …
> the Examiner has failed to provide a convincing rationale or evidence to prove <u>why the claimed subject matter is considered as an abstract idea</u>. In the Office Action, pages 3-4, the Examiner immediately discussed why the claimed subject matter does not include "significantly more," without any explanation as to why the claimed subject matter is considered as an abstract idea.
> …
> Because the Examiner has failed to prove, by convincing evidence, that the claimed subject matter is directed to an abstract idea, Appellant respectfully submits that the Examiner has not met the first step of the *Alice Corp.*

Br. 10–11.

Appellants mischaracterize the purpose of the *2014 Interim Guidance on Patent Subject Matter Eligibility* guidelines as placing a requirement on the Examiner. Further, any Examiner's failure to follow the Director's guidance is appealable only to the extent that the Examiner has failed to follow the statutes or case law. That is, to the extent the Director's guidance goes beyond the case law and is more restrictive on the Examiner than the case law, failure of the Examiner to follow those added restrictions is a matter for petition to the Director. We review Appellants' particular arguments against the case law and find no requirement in the law that the Examiner perform a streamlined § 101 *Alice/Mayo* analysis.

3. Obviousness

We have reviewed the Examiner's obviousness rejection of claims 1, 3–18 in light of Appellants' contentions that the Examiner has erred.

Further, we have reviewed the Examiner's response to Appellants' arguments. The Examiner has provided a comprehensive response to each argument presented by the Appellants on pages 21 through 23 of the Answer. We have reviewed this response and concur with the Examiner's findings and conclusions. We adopt as our own (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken and (2) the reasons set forth by the Examiner in the Examiner's Non-Final Action and Answer in response to Appellants' Appeal Brief.

We have considered Appellants arguments, but find them unpersuasive. In particular, Appellants fail to address the Examiner's actual rejection—that Toutanova teaches "reducing a hierarchical phrase-based translation rule of both of a source language side and a target language side using a dependency structure" (Ans. 21) and Shen teaches "the reducing comprises removing translation rules which do not satisfy the relaxed-well-formed dependency structure" (Ans. 22). *See* Non-Final Act. 7–22; Ans. 21–23. Instead, Appellants contend Shen, individually, does not teach the disputed features of claim 1. *See* Br. 17–19. Additionally, Appellants did not file a Reply Brief addressing the Examiner's clarified findings and additional discussion of the disputed limitations, or otherwise rebutting the findings and responsive arguments made by the Examiner in the Answer.

CONCLUSIONS

We conclude Appellants have not demonstrated the Examiner erred in rejecting claims 1, 3–18 under 35 U.S.C. § 101.

We affirm the Examiner's rejection of claims 1, 3–18 as being unpatentable under 35 U.S.C. § 103(a).

DECISION

We affirm the Examiner's final rejection of claims 1, 3–18.

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

AFFIRMED