UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/056,246	10/17/2013	Harish K. Suvarna	AD01.3169US01	8912

111003   7590   02/04/2020

Adobe / Finch & Maloney PLLC
50 Commercial Street
Manchester, NH 03101

EXAMINER
NGUYEN, NGA B

ART UNIT	PAPER NUMBER
3683	

NOTIFICATION DATE	DELIVERY MODE
02/04/2020	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):

docketing@finchmaloney.com
nmaloney@finchmaloney.com

PTOL-90A (Rev. 04/07)

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

Ex parte HARISH K. SUVARNA

_____

Appeal 2019-000833
Application 14/056,246
Technology Center 3600

_____

Before JOSEPH L. DIXON, JENNIFER L. McKEOWN, and
BETH Z. SHAW, *Administrative Patent Judges*.

McKEOWN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's
decision to reject claims 1–13, 15–20, and 23. Claims 14, 21, and 22 are
cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

---

[1] We use the word "Appellant" to refer to "applicant" as defined in 37
C.F.R. § 1.42(a). Appellant identifies Adobe Systems Incorporated as the
real party in interest. Appeal Br. 3.

STATEMENT OF THE CASE

Appellant's disclosed and claimed invention relates "to the evaluation of content generated via social networks, and more specifically to methods for filtering and analyzing social network content so that consumer sentiment can be gauged more accurately and efficiently." Spec. ¶ 1.

Claims 1 and 10 are illustrative of the claimed invention and reads as follows:

> 1. A computer-implemented content filtration method for performing a classification of content that is generated via an online social network and upon which a sentiment analysis is based, the method comprising:
>
> receiving, by a sentiment analysis server having a processor, a plurality of social network content items from a social network server, wherein each of the plurality of content items are classifiable as at least one of a plurality of content types, the plurality of content types including sentiment bearing social network content and spam content;
>
> evaluating, by the processor, a particular one of the plurality of content items with respect to each of a plurality of features;
>
> generating, by the processor, a feature vector corresponding to the particular content item, the feature vector representing a subset of the plurality of features which are evaluated as being applicable to the particular content item;
>
> receiving, by the sentiment analysis server, input identifying a particular content type toward which the classification will be biased;
>
> identifying a particular one of the plurality of features based on the received input, wherein the identified feature is ranked as having (a) a relatively high correlation with a content type other than that identified by the received input, and (b) a relatively low correlation with the particular content type identified by the received input;
>
> masking, by the processor, the identified feature; and

classifying, by the processor, the particular content item as at least one of the plurality of content types based on unmasked features in the feature vector, wherein classification of the particular content item is biased toward the particular content type.

10. A computer-implemented method for evaluating sentiment in content generated via an online social network, the method comprising:

receiving, by a sentiment analysis server, a corpus of social network content that comprises a plurality of social network content items;

using a content filter executing on the sentiment analysis server to filter the received corpus of social network content and extract a subset of the social network content items from the received corpus, the subset of extracted social network content items including a plurality of neutral content items and a plurality of sentiment bearing content items;

using a sentiment engine executing on the sentiment analysis server to perform a sentiment analysis on those social network content items that were extracted from the received corpus by the content filter; and

using a sentiment browser to display results of the sentiment analysis, at least a portion of the neutral content items, and at least a portion of the sentiment bearing content items, wherein the results of the sentiment analysis are displayed in response to receiving the corpus of social network content.

REJECTION

The Examiner rejected claims 1–13, 15–20, and 23 under 35 U.S.C. § 101 as directed to patent ineligible subject matter. Final Act. 5–10.

ANALYSIS

THE 35 U.S.C. § 101 REJECTION

Based on the record before us, we are not persuaded that the Examiner erred in concluding that claims 1–13, 15–20, and 23 are directed to patent ineligible subject matter.

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

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Id*. at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc*., 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, i.e., the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts

determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 176; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (citation omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that

the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

The PTO has published revised guidance on the application of section 101. USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Memorandum"). Under that guidance, we first look 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* MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") § 2106.05(a)–(c), (e)–(h) (9th ed., rev. 08.2017, Jan. 2018)).

See Memorandum, 84 Fed. Reg. at 52, 55–56. Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we 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 Memorandum, 84 Fed. Reg. at 56.

Claim 1-5, 7-9, 17-19, and 23

Revised Step 2A

Under the Memorandum, in prong one of step 2A we look to whether the claims recite a judicial exception. Claim 1 recites "evaluating. . . a particular one of the plurality of content items with respect to each of a plurality of features;" "generating. . . a feature vector corresponding to the particular content item, the feature vector representing a subset of the plurality of features which are evaluated as being applicable to the particular content item;" "identifying a particular one of the plurality of features" based on certain rankings correlating to the received input; "masking. . . the identified feature;" and "classifying. . . the particular content item as at least one of the plurality of content types based on unmasked features. . . ."

In other words, claim 1 evaluates content items with features, generates a feature vector, identifies particular features, masks certain features, and classifies the content item based on unmasked features. These steps, namely evaluating, identifying, masking or discounting, and classifying, can be performed within a human mind and, thus, are mental processes. Additionally, generating a feature vector can be practically performed in the human mind with the aid of pen and paper. As such, the claimed invention recites mental processes, which are an abstract idea. *See Elec. Power Grp, LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (noting that the Federal Circuit has "treated 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."); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–73 (Fed. Cir. 2011) (holding that a claim whose "steps can be performed in the

human mind, or by a human using a pen and paper" is directed to an "unpatentable mental process[]"); *see also* Final Act. 4 (finding that claim 1 is simply "receiving, evaluating, generating, receiving, identifying, masking, and classifying data which can be performed in a computer and is similar to the kind of 'organizing human activity' and is an idea of itself" and noting that the claimed invention is similar to concepts found to be abstract in *Intellectual Ventures I LLC v. Capital One Bank*, 792 F.3d 1363 (Fed. Cir. 2015), *Elec. Power Grp., LLC* 830 F.3d 1350, and *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)).

Under prong two of revised step 2A, we determine whether the recited judicial exception is integrated into a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

Claim 1 additionally recites a processor, a social network server, and a network, as well as receiving a plurality of content items and receiving an input. *See also* Final Act. 4 (noting that the claim additional includes a computer, processor, and other software modules). Here, the additional limitations recited beyond the judicial exception itself, alone or in combination, fail to integrate the exception into a practical application. More particularly, and contrary to Appellant's unsupported assertions, the claimed invention is not: (i) an improvement to the functionality of a computer or other technology or technical field (*see* MPEP § 2106.05(a)); (ii) a "particular machine" to apply or use the judicial exception (*see* MPEP § 2106.05(b)); (iii) a particular transformation of an article to a different

thing or state (*see* MPEP § 2106.05(c)); or (iv) any other meaningful limitation (*see* MPEP § 2106.05(e)). *See also* 84 Fed. Reg. at 55.

Appellant argues that the claimed invention is not "directed to" an abstract idea because it "provides a non-abstract improvement to existing technology." Appeal Br. 11. For example, according to Appellant, "the Specification [] clearly identifies a technical problem associated with existing content classification techniques, and further explains the details of an unconventional technical solution to that problem." Appeal Br. 11. Appellant maintains that the receiving, identifying, masking, and classifying steps

> make[] clear that the classification is based on the correlations between particular features and particular content types. Such correlations will change over time as language usage patterns change. This makes clear that a technological improvement that provides more accurate content classification is actually reflected in Claim 1, and therefore that Claim 1 is not directed to an abstract idea.

Appeal Br. 12. *See also* Appeal Br. 12–13 (arguing that the claimed invention is analogous to the claims in *McRO* because the claimed invention "describes a specific way of solving problems associated with content item classification. Claim 1 does not merely claim the idea of a solution or outcome.").

We find Appellant's arguments unpersuasive. Appellant may describe an improved method of classifying content, but has not persuasively shown that this method is a "technological improvement." For example, receiving an input to consider dynamically changing vocabulary is not a *technical* problem. Instead, the claimed invention is an improved mental process. As discussed above, a person, through a mental process, can

receive a bias input, identify content features, mask or disregard certain content features, and then classify the content based on the non-masked features. Appellant fails to describe sufficiently how the claimed invention provides a technical improvement to the functioning of the computer or the prior art process. Rather, we agree with the Examiner, "the recitation of the computer limitations amounts to mere instructions to implement the abstract idea on a computer." Final Act. 5. *See also FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) (citing *Bancorp Servs., LLC v. Sun Life Assurance Co.*, 687 F.3d 1266, 1278 (Fed. Cir. 2012)) ("[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.")); *Intellectual Ventures I LLC v. Erie Indemnity Co.*, 711 F. App'x 1012, 1017 (Fed. Cir. 2017) (unpublished) ("Though the claims purport to accelerate the process of finding errant files and to reduce error, we have held that speed and accuracy increases and accuracy increases stemming from the ordinary capabilities of a general-purpose computer do[ ] not materially alter the patent eligibility of the claimed subject matter.'").

We further note that the additional steps of receiving content and receiving an input are insignificant extra-solution activity. *See* Ans. 7–8; MPEP § 2106.05(g); *see also, e.g.*, *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014)("That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive."). As such, we determine that the additional limitations, alone or in combination, do not integrate the judicial exception into a practical application.

Step 2B

Under step 2B, we determine that the claimed additional limitations, alone or in combination, do not add significantly more to the abstract idea. Appellant argues the claimed identifying and masking limitations are not generic. Appeal Br. 16–17. According to Appellant, these limitations provide significantly more than the claimed abstract idea. *Id.*

We disagree. Notably, as discussed above, the claimed identifying features of the content based on data, ranking the features, and masking or disregarding certain features are steps performed in the human mind. As such, these are recited mental steps. As the Examiner points out, the claimed processor "perform[s] purely generic computer functions" namely "to receive, evaluate, generate, receive, identify, mask, and classify data." Final Act. 5. The Examiner relies on paragraphs 19-21 of the Specification to show that the network server and network are well-known, routine, and conventional. Ans. 9; *see, e.g.,* Spec. ¶ 20 (describing the network and network server may "such as those typically associated with social network services like Facebook, Google+ and Twitter."); Spec. ¶ 21 (noting that the processor "can be any suitable processor, and may include one or more coprocessors or controllers, such as an audio processor or a graphics processing unit. . . ").

Moreover, as noted above, the additional steps of receiving content and receiving an input are insignificant extra-solution activity. *See* Ans. 7–8; MPEP § 2106.05(g); *see also*, *e.g.*, *buySAFE, Inc.*, 765 F.3d at 1355 ("That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive."). As such, we are

not persuaded that the combined use adds significantly more to the claimed judicial exception.

Claims 6 and 20

With respect to claims 6 and 20, Appellant additionally argues

> using a naive Bayes classifier and a support vector machine learning model, as recited in Claim 6, represents an inventive concept that is significantly more than any abstract idea to which Claim 6 might be directed. In particular, the combined use of such models goes beyond what is well-understood, routine, conventional activity in the field of content filtering and sentiment analysis.

Appeal Br. 18.

We find these arguments unpersuasive. Claim 6 merely adds that the received input "is based on a naïve Bayes probability distribution" and the classification "is based on a prediction generated by a support vector machine learning model." In other words, claim 6 merely adds using a computer to perform well-known and generic calculations. *See, e.g.,* Ans. 9–11. *See also Intellectual Ventures I LLC*, 711 F. App'x at 1017. As such, we are not persuaded that the combined use adds significantly more to the claimed judicial exception.

Claims 10–13 and 16

Revised Step 2A

Under the Memorandum, in prong one of step 2A we look to whether the claims recite a judicial exception. Claim 10 recites "using a content filter. . . to filter the received corpus of social network content and extract a subset of the social network content items from the received corpus" including neutral content items and sentiment bearing content items" and

"using a sentiment engine. . . to perform a sentiment analysis" on the extracted content items. In other words, claim 10 filters a subset of data and performs a sentiment analysis on the data. Filtering, selecting a subset of content items, and evaluating sentiment of content items can be performed within a human mind alone or with the help of pen and paper. Claim 10, therefore, recites a mental process, which is an abstract idea. *See also* Final Act. 7 "receiving, filtering, extracting, performing, receiving, and displaying data which can be performed in a computer and is an idea of itself."); *Bascom Global Internet Services V. AT&T Mobility LLC*, 827 F.3d 1341, 1348 (Fed. Cir. 2016) (noting generally "that filtering content is an abstract idea because it is a longstanding, well-known method of organizing human behavior, similar to concepts previously found to be abstract."); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1314 (Fed. Cir. 2016) (finding abstract the claimed method of filtering emails).

Under prong two of revised step 2A, we determine whether the recited judicial exception is integrated into a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

Claim 10 additionally recites a sentiment analysis server and a sentiment browser, as well as receiving a plurality of content items and displaying results. Here, the additional limitations recited beyond the judicial exception itself, alone or in combination, fail to integrate the exception into a practical application. More particularly, and contrary to Appellant's unsupported assertions, the claimed invention is not: (i) an

improvement to the functionality of a computer or other technology or technical field (*see* MPEP § 2106.05(a)); (ii) a "particular machine" to apply or use the judicial exception (*see* MPEP § 2106.05(b)); (iii) a particular transformation of an article to a different thing or state (*see* MPEP § 2106.05(c)); or (iv) any other meaningful limitation (*see* MPEP § 2106.05(e)). *See also* 84 Fed. Reg. at 55.

Appellant argues that the claimed invention is not "directed to" an abstract idea because it "provides a non-abstract improvement to existing technology." Appeal Br. 20–21. Appellant, in particular, argues that the claimed filtering prior to sentiment analysis

> reduces the extent to which data that is irrelevant to the sentiment analysis-such as spam content or unintelligible foreign language content-is submitted to the sentiment engine. As pointed out in the Specification, this can reduce bandwidth requirements, reduce sentiment analysis latency, reduce the cost associated with sentiment analysis, and increase the accuracy of the sentiment analysis.

Appeal Br. 22 (citing Spec. ¶ 13). However, as discussed above, the Federal Circuit has found filtering to be abstract. *See, e.g.*, *Bascom Global Internet Services*, 827 F.3d at 1348 (noting generally "that filtering content is an abstract idea because it is a longstanding, well-known method of organizing human behavior, similar to concepts previously found to be abstract."); *Intellectual Ventures I LLC*, 838 F.3d at 1314 (Fed. Cir. 2016) ("filtering files/e-mail—is an abstract idea."). The claimed invention here merely applies a judicial exception using generic computers "to the particular technological environment of the Internet." *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.2d 1245, 1259 (Fed. Cir. 2014); *see also* Final Act. 7–8.

14

We further note that the additional steps of receiving content and displaying results are insignificant extra-solution activity. *See* Ans. 7–8; MPEP § 2106.05(g); *see also, e.g., buySAFE, Inc..*, 765 F.3d at 1355 ("That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive."); *Elec. Power Grp., LLC*, 830 F.3d at 1354–55 ("merely presenting the results of abstract processes of collecting and analyzing information, without more . . . is abstract as an ancillary part of such collection and analysis."). As such, we determine that the additional limitations, alone or in combination, do not integrate the judicial exception into a practical application.

Step 2B

Under step 2B, we determine that the claimed additional limitations, alone or in combination, do not add significantly more to the abstract idea. According to Appellant, "by specifying that the sentiment analysis is performed 'on those social network content items that were extracted from the received corpus by the content filter,' Claim 10 specifies use of a filtering tool at a specific location-that is, before sentiment analysis is performed." Appeal Br. 26. Thus, Appellant argues that "an inventive concept can be found in the nonconventional and non-generic arrangement of the 'receiving', 'using ... to filter', 'using ... to perform a sentiment analysis', and 'using ... to display results' actions defined in the claim." *Id.*

We find this argument unpersuasive. As the Examiner explains, considering the additional elements individually and in combination, "the claimed computer components at each step . . . perform purely generic computer functions." Ans. 17. Further, we agree with the Examiner "[t]here is no indication that the combination of elements improves the functioning

15

of a computer/computer networks themselves," instead "[t]heir collective functions merely provide conventional computer implementation." *Id.*

Moreover, the Examiner relies on paragraphs 19-21 of the Specification to show that the network server and network are well known, routine, and conventional. Ans. 9; *see, e.g.*, Spec. ¶ 20 (describing that the network and network server may a network server "such as those typically associated with social network services like Facebook, Google+ and Twitter."); Spec. ¶ 21 (noting that the processor "can be any suitable processor, and may include one or more coprocessors or controllers, such as an audio processor or a graphics processing unit. . ."). As such, we are not persuaded that the combined use adds significantly more to the claimed judicial exception.

Claim 15

Appellant argue that the claimed sentiment analysis on multiple languages is an inventive concept that is significantly more than the claimed judicial exception. Appeal Br. 27. According to Appellant, "the combined extraction and analysis of multilingual content, combined with display of sentiment analysis results for multilingual content, goes beyond what is well-understood, routine, conventional activity in the field of content filtering and sentiment analysis." *Id.* We disagree. Notably, as the Examiner identifies, the limitations of claim 15 merely limit the scope of the analyzed data, namely foreign language content items instead of only content items. *See* Final Act. 9. As discussed above, performing a sentiment analysis on content, including foreign language content items, is a mental process, which is an abstract idea. Therefore, we find Appellant's argument unpersuasive.

Accordingly, based on the record before us, we affirm the rejection of claims 1–13, 15–20, and 23 as directed to patent ineligible subject matter.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–13, 15–20, and 23	101	Eligibility	1–13, 15–20, 23	

AFFIRMED