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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/079,691	11/14/2013	John E. DRUMMOND	FIS920070137US2	1039
45988	7590	01/03/2018	EXAMINER	
Roberts Mlotkowski Safran Cole & Calderon, P.C. Intellectual Property Department P.O. Box 10064 MCLEAN, VIRGINIA 22102-8064			CHOY, PAN G	
			ART UNIT	PAPER NUMBER
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			01/03/2018	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):

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Office Action Summary

Application No.

14/079,691

Applicant(s)

DRUMMOND et al.

Examiner

PAN G CHOY

Art Unit

3624

AIA Status

No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 October 2017
 - A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) Claim(s) 1,3,5,8-9 and 13-20 is/are pending in the application.
 - 5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) Claim(s) _____ is/are allowed.
- 7) Claim(s) 1,3,5,8-9 and 13-20 is/are rejected.
- 8) Claim(s) _____ is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) All b) Some** c) None of the:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____
- 3) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 4) Other: _____

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Introduction

2. The following is a **Final** Office Action in response to Applicant's communications received on October 30, 2017. Claims 1 and 8 have been amended, Claims 2, 4, 6-7 and 10-12 have been canceled, and Claims 17-20 have been added.

Currently claims 1, 3, 5, 8-9 and 13-20 are pending for examination, Claim 1 is independent.

Response to Amendments

3. **The 35 USC § 112(b) rejection** as set forth in the previous Office action is partially withdrawn in response to Applicant's amendments, therefore the 35 U.S.C. § 112(b) rejection to claims 1 and 8 is maintained.
4. Applicant's amendments to claims 1 and 8 are **not sufficient to overcome the 35 USC § 101 rejection** as set forth in the previous Office action, and therefore the 35 USC § 101 rejection to claims 1, 3, 5, 8-9 and 13-20 is maintained.

Response to Arguments

5. Applicant's arguments filed on 10/30/2017 have been fully considered but they are not persuasive.

6. In the Remarks in the 4th paragraph of page 6, Applicant argues that one of ordinary skill in the art readily understands the meaning of "substantially constantly monitoring" as effectively being a constant monitoring, with the possibility of occasional interruption.

In response to Applicant's argument, the Examiner respectfully disagrees. Although one of ordinary skill in the art may understand substantially means significantly, however, one ordinary skill in the art will not be able to apprise of the boundary for substantially, such as the time interval for monitoring may be every second, every minute, or every week.

7. In the Remarks in the second paragraph of page 7, Applicant's arguments regarding the 35 U.S.C. § 101 rejection that independent claim 1 corresponds closely with example 21 provided in the July 2015 Update Appendix 1, is similar to example 21 provides alerts to users when certain circumstances occur. Specifically, independent claim 1 specifies that a user will be notified and prompted to repeat determining the supply and demand after waiting a first predetermined period of time when the ratio exceeds a second threshold value.

In response to Applicant's argument, the Examiner respectfully disagrees; let alone Example 21 is non-precedential and even if it was precedential, the claimed method in Example 21 addresses the Internet-centric challenge of alerting a subscriber with time sensitive information when the subscriber's computer is offline. In particular, the claim recites transmitting an alert over a wireless communication channel to activate the stock viewer

application, which causes the alert to display and enables the connection of the remote subscribe computer to the data source over the Internet when the remote subscriber computer comes online. In contrast, Applicant's invention related to securing supply of an article which is directed to inventory management system for determining a time for making the last purchase of an end-of-life article, the invention is not necessarily rooted in a computer technology field. Specifically, the step of notifying/prompting a user to repeat the determining the supply and the demand is clearly admits the determination of the claimed subject matter is performed by a user. As admits by the Applicant that the user can interact with the system to decide whether to repeat determining the supply and demand (last para. on pg. 7). Thus, it is an abstract idea.

Further, even if the claimed solution may improve the way of making end-of-life purchase that results in money saving and cost-effectiveness for the manufacturing of integrated circuit chips, there is no improvement to the functioning of the computer or the integrated circuit chips.

With respect to Example 34, the claims in Example 34 (*BASCOM*) allows end-user to customize access control of Web contents by filtering Internet content at the remote ISP server, which can only be happened within the Internet technology, Applicant's invention aims to solve an entrepreneurial problem—"securing a supply of an article", the claimed determinations can be entirely performed in the human mind, or by a human using a pen and paper. Specifically, the claim recites "notifying a user to repeat the determining". The Federal Circuit has held that if a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) ("[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.").

Furthermore, Examiner respectfully notes that the examples issued by the Office in conjunction with the Interim Eligible Guidance are merely hypothetical intended to show exemplary analyses only and should not be used as a basis for a subject matter eligibility rejection or relied upon in the same manner as a decision from a court (see “May 2016 Update – Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant’s Response to a Subject Matter Eligibility Rejection” page 2, ¶ 2 and page 5, ¶ 2, Section II C). With respect to Example 36 for tracking inventory, Examiner discovers that what was considered a meaningful limitations in Example 36 was: Claims 2 and 3 recited as system claims comprising high-resolution video camera array for acquiring image sequence, a memory for storing the acquired image sequences, and a processor for data manipulation. The claims are eligible because when the memory and processor are viewed in combination with a high-resolution video camera array that reconstructs the 3-D coordinates of the item of inventory using overlapping images of the item and prior knowledge of the location and field of view of the camera(s) provides significantly more than the abstract idea of using data collection techniques to manage inventory. In contrast, Applicant’s invention related to a method for securing supply of an article by determining a time for making the last purchase of an end-of-life article, which is directed to fundamental economic practices. Even the claim recites the additional element of a computer device for summing demand and such computer device comprises a parts database. However, these additional elements when viewed individually and as a combination, do not provide meaningful limitations to transform the abstract idea into a patent eligible application of the abstract idea such that the claims amount to significantly more than the abstract idea itself. Therefore, these claims are not patent eligible.

8. In the Remarks in the last paragraph of page 10, Applicant's arguments regarding the 35 U.S.C. § 101 rejection that independent claim 1 specifically recites "integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip." This is clearly not merely an entrepreneurial solution, as alleged in the Office Action. It is, instead, an actual manufacturing step. Such a manufacturing step cannot be "entirely performed mentally."

In response to Applicant's argument, the Examiner respectfully disagrees; First, the step of "integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip, after executing the end-of-life purchase of the article" may never be executed because the ratio of the supply to the demand may never be less than or equal to the first threshold value when there is no demand. Second, even if the step of "end-of-life purchase" was executed, the step of "integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip, *after executing the end-of-life purchase of the article,*" is directed to an insignificant post-solution activity as it is unrelated to the other steps in the claim. Although the purpose of purchasing the end-of-life article is for making circuit chips, however, determining a time to purchase the article is unrelated to integrating the article with the chips, discrete circuit elements or signal processing devices. Thus, the claim is not eligible.

9. In the Remarks in the second paragraph of page 11, Applicant's arguments regarding the 35 U.S.C. § 101 rejection that the claim requires far more than operation "and a high level of generality or with the assistance of additional elements performing well known, conventional functions."

In response to Applicant's argument, the Examiner respectfully disagrees. Applicant's invention aims to solve an entrepreneurial problem—securing supply of an article at an optimal time by comparing the ratio of the supply to the demand to a threshold value, which can be entirely performed mentally, this step is similar to the abstract idea of comparing information regarding sample to a control target data as identified by the courts in (*Ambry, Myriad CAFC*); and the step of substantially constantly monitoring a rate of increase in demand for the article is nothing more than data gathering for recording a rate of increase in demand, which has been recognized by the courts as merely well-understood, routine, and conventional functions of generic computers. See 2015 Guidance, pg. 7. Further, Applicant's claims are also similar to the claims in *Electric Power Grids*, concluded by the court as directed to “the abstract idea of monitoring and analyzing data from disparate sources.” See *Electric Power Group, LLC v. Alstom S.A., Alstom Grid, Inc. at 4*.

10. In the Remarks in the second paragraph of page 12, Applicant's arguments regarding the 35 U.S.C. § 101 rejection that the claimed invention is clearly directed to an *improvement to computer functionality* with regard to providing a combined hardware/software solution in the technology of manufacturing semiconductor integrated circuit devices.

In response to Applicant's argument, the Examiner respectfully disagrees, as discussed above, Applicant's invention aims to solve an entrepreneurial problem—securing supply of an article at an optimal time by comparing the ratio of the supply to the demand to a threshold value, which can be entirely performed mentally, and the step of “integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit

chip, *after executing the end-of-life purchase of the article,*” is directed to an insignificant post-solution activity as it is unrelated to the other steps in the claim. Even such article may be used for manufacturing semiconductor integrated circuit devices; however, the article purchased at an optimal time neither improve the functioning of the computer itself, nor the semiconductor made with the article.

Further, the claims here are unlike the claims in *Enfish*. In *Enfish*, the claims at issue focused not on asserted advances in uses to which existing computer capabilities could be put, but on a specific improvement—a particular database technique—in how computers could carry out one of their basic functions of storage and retrieval of data. *Enfish*, 822 F.3d at 1335–36; *see Bascom*, 2016 WL 3514158, at *5; *cf. Alice*, 134 S. Ct. at 2360 (noting basic storage function of generic computer). The present case is different: although the invention may help to ensure the amount of article needed, which is not an improvement to the data structure or to the computer itself, the focus of the claims is not on such an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.

11. In the Remarks in the last paragraph of page 12, Applicant’s arguments regarding the 35 U.S.C. § 101 rejection that the current independent claim 1 is similar to the claims hold to be patent eligible in the case of *SiRF Technology v. ITC*, 601 F.3d 1319 (Fed. Cir. 2010).

In response to Applicant’s argument, the Examiner respectfully disagrees; In the *SiRF Technology* case, a GPS receiver is required to generate and provide the pseudoranges to be utilized in the mathematical relationships to calculate the absolute position and absolute time of the GPS receiver, which imposes a meaningful limit on the scope of a claim. In contrast, Applicant’s invention aims to solve an entrepreneurial problem—securing supply of an article at

an optimal time by comparing the ratio of the supply to the demand to a threshold value, which can be entirely performed mentally, and the step is similar to the abstract idea of comparing information regarding sample to a control target data as identified by the courts in (*Ambry, Myriad CAFC*). See July 2015 Guidance, pg. 5. Further, claim 1 recites “an article comprising a component for manufacturing an integrated circuit chip,” and “after executing the end-of-life purchase of the article, the article is integrated with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip.” However, claiming structure in the method claim has no patentable weight because it fails to exhibit any functional interrelationship with the way the steps are performed. It has been held that to be entitled to such weight in method claims, the recited structural limitations therein must affect the method in a manipulative sense and not amount to the mere claiming of a use of a particular structure (*Ex parte Pfeiffer*, 135 USPQ 31 (BPAI 1961)). Furthermore, integrating known elements is considered the equivalent of making parts or structures integral and is not considered patentably distinguishable from the cited prior art. See *In re Larson*, 144 USPQ 347, 349; 339 US 965 (CCPA 1965); *In re Wolfe*, 116 USPQ 443, 444; 251 F2d 854 (CCPA 1958) (“it would seem scarcely necessary to point out that merely making a two-piece handle in one piece is not patentable invention because it is an obvious thing to do if deemed desirable.”)

12. In the Remarks in the 3rd paragraph of page 13, Applicant’s arguments regarding the 35 U.S.C. § 101 rejection that independent claim 1 is like the claims in the DDR case, is clearly necessarily rooted in a hardware technology, this hardware technology is the manufacture of integrated circuit chips. In other words, the present invention is directed to overcoming a problem specifically arising in the manufacture of such integrated circuit chips, that is deciding

the most cost-effective time to make an end-of-life purchase of a component which is necessary for the manufacture of such integrated circuit chips. Again, these are improvements in an area of a hardware technology itself, not mere abstract idea

In response to Applicant's argument, the Examiner respectfully disagrees. Applicant's claims seek to address a problem that existed and continues to exist outside of the realm of the technology associated with the additionally recited elements. The proposed solution is one that could have been implemented directly by a human performing analogous functions by hand and/or with the assistance of a general purpose computer applied to facilitate the functions (e.g., querying the inventory database) at a high level of generality or with the assistance of additional elements performing well-known, conventional functions. In Applicant's claims, the computer device could be substituted with a human user and the underlying invention would result in a similar solution to the problem and hand. The rejected claims do not adhere to the same fact pattern seen in the *DDR Holdings, LLC v. Hotels.com* decision. In the *DDR Holdings* decision, the manner in which the network itself operated was changed to improve network operations. However, for the instant Application, even the claimed solution may improve the ways to make end-of-life purchase results in money saving, there is no actual improvement made to the operations or physical structure of the additional elements such as the computer itself claimed in the instant application. Further, it is unclear how "a most cost-effective time to make an end-of-life purchase" can improve a hardware technology.

13. In the Remarks on page 20, Applicant argues that Nielsen completely fails to teach or suggest any relationship between constantly monitoring an increase in demand for an article with the action of repeating the determining step of supply and demand “before either the first predetermined time period or the second predetermined time period have elapsed in the rate of increase in demand exceeds a predetermined amount.” In other words, in the present claimed invention, the constant monitoring of the rate of increase in demand for an article is for the specific purpose of repeating the step of determining supply and demand before this step would normally be carried out, as recite in claim 1. Applicant’s argument has been fully considered and are persuasive, therefore, **the 35 U.S.C. § 103 rejection as set forth in the previous Office Action is withdrawn.**

Claim Rejections – 35 USC § 112

14. The following is a quotation of 35 U.S.C. 112(b):

(B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

15. The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. **Claims 1 and 8** are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 8, the term "substantially constantly" in claims are directed to a relative term which renders the claims indefinite. The term "substantially constantly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 101

17. The 35 U.S.C. §101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

18. **Claims 1, 3, 5, 8-9 and 13-20** are rejected under 35 U.S.C. §101 because invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more. Here, under considerations of the broadest reasonable interpretation of the claimed invention as articulated by "MPEP 2103(I)" and "May 2016 Update - Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant's Response to a Subject Matter Eligibility Rejection" page 2, ¶ 1 and first sentence below Section II: Formulating a § 101 Rejection. Examiner finds that the Applicant invented a method for "securing supply of an article based on the forecasted demand", see ¶ 8 and ¶ 34.

Subject Matter Eligibility Standard

In its recent decision, *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.* ("Alice Corp."), the Supreme Court made clear that it applies the framework set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ___ (2012) (*Mayo*), to analyze claims directed towards laws of nature and abstract ideas. *Alice Corp.* also establishes that the same analysis applies for all categories of claims (e.g., product and process claims).

When considering subject matter eligibility under 35 U.S.C. 101, the basic inquiries to determine subject matter eligibility remain the same as explained in MPEP 2106(I). **First**, it must be determined whether the claim is directed to one of the four statutory categories of invention, i.e., process, machine, manufacture, or composition of matter. **Second**, if the claim does fall within one of the statutory categories, it must then be determined whether the claim is directed to a judicial exception (i.e., law of nature, natural phenomenon, and abstract idea). **The two part test** for patent eligibility set forth by the Supreme Court in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012), and *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347 (2014), **2A)** determine whether claims are directed to a patent-ineligible concept. If they are, **2B)** consider whether the additional elements recited in

the claim “transform the nature of the claim” into a patent-eligible application by reciting an “inventive concept” that is “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.” Id. at 1294. Example of abstract ideas referenced in *Alice Corp.*

Include:

- a. Fundamental economic practices;
- b. Certain methods of organizing human activities;
- c. An idea itself; and
- d. Mathematical relationships/formulas.

Limitations reference in *Alice Corp.* that may be enough to qualify as “significantly more” when the claim features include, as non-exclusive examples:

- a. Improvements to another technology or technical field;
- b. Improvements to the functioning of the computer itself;
- c. Meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment.

Examples that are NOT enough to qualify as “significantly more” when recited in a claim with an abstract idea include, as non-limiting or non-exclusive examples:

- a. Merely adding the words “apply it” (or an equivalent words to that effect) with an abstract idea, or mere instructions to implement an abstract idea on a computer;
- b. Merely instructions to implement an abstract idea of the computer;
- c. Not effecting a transformation or reduction of a particular article to a different state or thing;
- d. Requiring no more than a generic computer to perform generic computer functions;
- e. Merely insignificant extra solution activity; or
- f. Generally linking to a particular technological environment or field of use.

Analysis

The following analysis is based on the “2014 Interim Eligibility Guidance Quick Reference Sheet,” (<http://www.gpo.gov/fdsys/pkg/FR-2014-12-16/pdf/2014-29414.pdf>) and the “July 2015 Update: Subject Matter Eligibility”, (hereinafter: July 2015 Update), <http://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf>; the May 2016 SME Update, and November 2016 SME Memo, available at

and-regulations/examination-policy/2014-interim-guidance-subject-matter-eligibility-0).

Examiner finds:

In Step 1: it first noted that claims 1, 3, 5, 8-9 and 13-20 are directed to a method for securing supply of an article, which falls within the statutory category of a process. Thus, Step 1 is satisfied.

In step 2A of *Alice*, it is to “determine whether the claims at issue are directed to a patent-ineligible concept,” such as an abstract idea. *Alice*, 134 S. Ct. at 2355. The claimed subject matter is directed to a method for securing a supply of an article, the method comprising comparing a supply of an article to a demand for the article. Securing a supply of an article to meet the forecasted demand is a fundamental building block of human ingenuity. As such it is an abstract idea.

More specifically, the limitations in the claims that describe the abstract ideas are: “determining a supply and a demand of the article, comparing a ratio of the supply to the demand to a first threshold value..., determining the ratio exceeds the first threshold value, comparing the ratio to a second threshold value, when the ratio exceeds the second threshold value, waiting a first predetermined time period before repeating the determining the supply and the demand, when the ratio exceeds the first threshold level but does not exceed the second threshold value, waiting a second predetermined time period before repeating the determining the supply and the demand, when the ratio is less than or equal to the first threshold value, executing the end-of-life purchase of the article, and monitoring a rate of increase in demand for the article and repeating the determining step...”. As described in the claims, the limitations are directed to an idea standing alone such as an uninstiated concept, plan or scheme, as well as a mental process (thinking) that “can be performed in the human mind, or by a human using a pen and paper”. The

claims are clearly focused on the combination of those abstract-idea processes. The advance they purport to make is querying an inventory of a bank and summing demand from plural demand sources using a computer device, which is not any particular assertedly inventive technology for performing those functions. These steps are similar to idea of comparing information regarding sample to a control target data was considered to be abstract in (*Ambry, Myriad CAFC*); and also similar to the claims in *Electric Power Grids*, concluded by the court as directed to “the abstract idea of monitoring and analyzing data from disparate sources.” See *Electric Power Group, LLC v. Alstom S.A., Alstom Grid, Inc. at 4*. The limitations are considered to be abstract idea because the invention is not necessarily rooted in the computer technology field, and the claimed steps of determining and comparing can be performed by a human analog (i.e., by hand or thinking). The Specification supports the view of these determinations can be performed in the human mind, such as “a user of an article determines an available supply of an article...the user determines the supply by determining the amount of articles available from a bank. This may be done, for example, by querying a supplier or inventory manager of the bank; the demand is determined by the user by examining any appropriate demand sources, such as, for example, ask contracting manufacturers how many units of the articles they need, etc.” (see ¶ 29-30). Besides, claim 1 clearly recited “notifying a user to repeat the determining the supply and the demand”. The Federal Circuit has held that if a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”). Further, the dependent claims are further narrowing the abstract idea by characterizing the parameters and repeating the determining and comparing processing. In this

regard, the Supreme Court has ruled that if a claim involves a natural law or phenomenon or abstract idea, even if the particular natural law or phenomenon or abstract idea at issue is narrow. *Mayo*, 132 S. Ct. at 1303. The Court in *Mayo* rejected the contention that the very narrow scope of the natural law at issue was a reason to find patent eligibility, explaining the point with reference to both natural laws and the kind of abstract idea. Accordingly, because an abstract idea is included in the claims, additional analysis (Step 2B) must be performed in order to determine whether any claim element or combination of elements amount to significantly more than the judicial exception.

In Step 2B of *Alice*, it is "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.'" *Id.* (alternation in original) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012)).

The claims as described, nothing in the subject matter claimed that transforms the abstract idea of securing a supply of an article by comparing a supply of an article to a demand for the article into an inventive concept.

The method of claim 1 sets out ten steps for securing supply of an article including the additional elements of a computer device and a parts database for performing the steps of querying an inventory of a bank and summing demand from plural demand sources. These additional elements, taken individually and as a combination, do not result in the claim amounting to significantly more than the abstract idea because the computer device is recited at a high level of generality and its broadest reasonable interpretation comprises only a processor and memory that simply perform generic computer functions, at best, the computer device may perform the step of querying an inventory of a bank stored in the database; however, querying an

inventory of a bank is merely directed to retrieving data from database, which has been recognized by the courts as merely well-understood, routine, and conventional functions of generic computers. See 2015 Guidance, pg. 7. In fact, paragraph [0017] of Applicant's Specification clearly admits that the invention requires no more than a generic computer which capable of executing computer program, such as "the computer device 14 can comprise *any general purpose computing* article of manufacture *capable of executing computer program code*..." Thus, generic computers performing generic computer functions to apply an abstract idea do not amount to significantly more than the abstract idea. Claim 1 further recites the limitation of "integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip, after executing the end-of-life purchase of the article," However, the step of integrating the article with chips, [] after executing the end-of-life purchase of the article is directed to an insignificant post-solution activity as it is unrelated to the other steps in the claim because determining a time to purchase the article has nothing to do with integrating the article with the chips to manufacture an integrated circuit chip. Besides, integrating the article with the chips to manufacture an integrated circuit chip requires the operation of human intelligence. The court has held that mental processes are not patent-eligible subject matter because the "application of [only] human intelligence to the solution of practical problems is no more than a claim to a fundamental principle." *Bilski*, 545 F.3d at 965. Thus, the limitations, taken individually and in combination, fail to yield an improvement to the computer itself, to another technology or technical field, or involve limitations that are reasonably understood as anything more than linking the abstract idea to a particular technological environment.

For the foregoing reasons, claims 1, 3, 5, 8-9 and 13-20 cover subject matter that is

judicially-excepted from patent eligibility under § 101 as discussed above. Therefore, the claims as a whole, viewed individually and as a combination, do not provide meaningful limitations to transform the abstract idea into a patent eligible application of the abstract idea such that the claims amount to significantly more than the abstract idea itself. The claims are not patent eligible.

Conclusion

19. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAN G CHOY whose telephone number is (571)270-7038. The examiner can normally be reached on 5/4/9 compressed work schedule.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anita Y Coupe can be reached on 571-270-3614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PAN G CHOY/
Primary Examiner, Art Unit 3624

REMARKS

Claims 1, 3, 5, 8, 9 and 13-20 are currently pending in the application. By this Amendment, claims 1 and 8 are amended for the Examiner's consideration. The above amendments do not add new matter to the application and are fully supported by the specification. For example, support for the amendments is provided in the original claims, FIGs. 2 and 5 and at paragraphs [0022], and [0045] of the specification. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Entry of the Amendment

Applicant submits that these amendments place the application in condition for allowance pursuant to the After Final Consideration Pilot (AFCP) 2.0 without the need for filing an RCE. As required by AFCP 2.0, Applicant certifies that (1) the above-identified application is (i) an original utility non-provisional application filed under 35 U.S.C. 111(a) (or a continuing application thereof) or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c); (2) the above-identified application contains an outstanding final rejection; (3) the instant amendment under 37 CFR 1.116 includes an amendment to at least one independent claim, which does not broaden the scope of the independent claim in any aspect; (4) Applicant is willing and available to participate in any interview requested by the Examiner concerning the present response; (5) PTO/SB/434 certification form is being filed electronically with the instant amendment using the Office's electronic filing system (EFS-Web); and (6) the certification form and the request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to an outstanding final rejection. Any necessary fees are submitted herein. Accordingly, Applicant respectfully submits that the Examiner consider the claims in the Application under AFCP 2.0.

Amendments to the Claims

In this Amendment, Applicant has amended claims for further consideration in this application to facilitate expeditious prosecution of the application. Applicant is not conceding that the subject matter encompassed by the claims prior to this Amendment is unpatentable over

the art cited by the Examiner. Applicant respectfully reserves the right to pursue claims in one or more continuing applications, including claims capturing the subject matter encompassed by the amended claims prior to this Amendment and additional claims.

Examiner Interviews

Applicant would like to thank Examiner Choy for the telephone interviews conducted on February 22, 2018 and February 27, 2018. In compliance with MPEP §713.04, the substance of these interviews is reflected in the following remarks.

During the interviews, the rejections under 35 U.S.C. §112 and §101 were discussed, and it was agreed that a combination of features as recited herein in the current claims would overcome the rejection of record under 35 U.S.C. §112. Although no agreement was reached with regard to the §101 rejection, appreciation is expressed to the Examiner for his indication during the interviews that he would carefully reconsider the rejection after the amendment was filed. Appreciation is also expressed to the Examiner for his indication during the February 27, 2018 interview that the amendment would be entered at least for purposes of placing the application in better form for appeal, noting that the amendment will remove the issue under 35 U.S.C. §112, and does not require further search or substantial further consideration. The present amendments to independent claim 1 adopt the strategy discussed in the interview.

35 U.S.C. §112 Rejection

Claims 1 and 8 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Applicant respectfully traverses this rejection.

With regard to independent claim 1 and dependent claim 8, the Examiner objects to the use of the term “substantially constantly” since, in the Examiner’s opinion, “the specification does not provide a standard for ascertaining the requisite degree.” Although Applicant respectfully disagrees, for example, for the reasons set forth in the previous Amendment, in order to expedite the prosecution of the present application, and, at a minimum, reduce the issues for appeal, the word “substantially” has been removed from claims 1 and 8, thereby obviating this issue.

Accordingly, for the reasons set forth above, reconsideration and removal of the rejection is respectfully requested.

35 U.S.C. §101 Rejection

Claims 1, 3, 5, 8, 9 and 13-20 are rejected under 35 U.S.C. §101 as being directed to a judicial exception, specifically an allegedly abstract idea, without amounting to significantly more than the abstract idea itself. Applicant respectfully traverses the rejection as follows.

Beginning on page 13 of the Office Action, the Examiner alleges that the claims are directed to the allegedly abstract idea of securing a supply of an article. On pages 15-19 of the Office Action, the Examiner alleges that the claimed comparison of the ratio of supply to demand to first and second threshold values is merely directed to instructions to implement the idea on a computer and/or computer implemented functions that are well-understood, routine, and conventional activities previously known in the art, and that could be performed mentally.

As discussed during the interview, independent claim 1 has now been amended to recite that the present claimed invention is specifically directed to a “method of manufacturing an integrated circuit chip.” In order to carry out the manufacture of the integrated circuit chip, two general steps are performed, namely “securing, using a computer device-implemented method, a supply of an article comprising a physical component for manufacturing the integrated circuit chip,” and “manufacturing the integrated circuit chip by integrating, via the user, the article with chips, discrete circuit elements or signal processing devices, after executing the end-of-life purchase of the article.” In conjunction with this, numerous sub-steps are recited for the step of securing the supply of the article, and numerous further limitations are provided regarding the relationships between the threshold values and the predetermined time periods. Appreciation is expressed to the Examiner for the indication on page 11 of the Office Action that this detailed recitation of steps for securing a supply and the relationships between the threshold values and the predetermined time periods was regarded as persuasive to overcome the previous prior art rejections.

As such, it is respectfully submitted that independent claim 1 and its dependent claims are clearly not directed to an abstract idea since a method of manufacturing an integrated circuit chip is certainly not an abstract idea. In particular, the end result of carrying out the method recited in independent claim 1 is the manufacture of an integrated circuit chip in accordance with the recited steps and claimed relationships. In other words, the present claims are directed to manufacturing real-world items, which should certainly not be regarded as an abstract idea.

During the interview, the Examiner recognized the real world aspects of the present claims, but stated that, in his opinion, the primary point of distinction of the claims over the cited prior art lies in the steps taken for supplying the article. In response, Applicant's representative pointed out that the recited steps for supplying the article pertain to real world articles, not abstract concepts. In particular, independent claim 1 recites determining a supply of articles in a bank, in other words, a bank containing real world articles. This being the case, it is respectfully submitted that the claimed steps for securing such articles for manufacture of an integrated circuit chip represent patent eligible subject matter.

Further, even if one regarded the claims as pertaining to an abstract idea, in accordance with Step 1 of the analysis set forth in the 2014 Interim Eligibility Guidance Quick Reference Sheet, as alleged on pages 15-17 of the Office Action, the fact that the claims are clearly limited specifically to securing real world articles from a bank for the manufacture of integrated circuit chips clearly represents "something more" in accordance with step 2B of the guidelines.

It is further noted that the points set forth above have recently been confirmed in the case of *Finjan, Inc. v Blue Coat Systems, Inc.*, CAFC Docket No. 2016-2520 (Fed. Cir. January 10, 2018). Referring to the *Enfish* decision, the Court stated:

Our cases confirm that software-based innovations can make "non-abstract improvements to computer technology" and be deemed patent-eligible subject matter at step 1.

The Court continues:

Similarly, the method of claim 1 employs a new kind of file that enables a computer security system to do things it could not do before... The asserted claims are therefore directed to a non-abstract improvement in computer functionality, rather than the abstract idea of computer security writ large.

Still further, the Court states:

Here, the claims recite more than a mere result. Instead, they recite specific steps... that accomplish the desired result. Moreover, there is no contention that the only thing disclosed as the result and not an inventive arrangement for accomplishing the result.

In the present instance, as discussed above, the present claims also recite more than a mere result. Instead, the claims recite specific steps, namely specific steps for obtaining a supply

of articles from a bank for the manufacture of integrated circuit chips. As such, as was the case in *Finjan*, it is respectfully submitted that independent claim 1 recites non-abstract improvements to integrated circuit manufacturing technology which are patent-eligible subject matter under Step 1.

In addition, it is respectfully submitted that independent claim 1 clearly includes additional elements that amount to significantly more than the judicial exception under Step 2. In other words, they are directed to the development of and improvements in real-world products, namely manufacturing integrated circuit chips. As such, it is respectfully submitted that these claims are directed to significantly more than an abstract idea itself under Step 2 of the USPTO's Interim Guidance on Patent Subject Matter Eligibility. In particular, as noted above with regard to the *Finjan*, the present claims are directed to a solution which is necessarily rooted in computer-related technology in order to overcome a problem specifically arising in the realm of such technology.

In addition, it is again noted that independent claim 1 corresponds closely with example 21 provided in the July 2015 Update Appendix 1 from the USPTO which found patent eligibility in a claim which generates a stock quote alert and forwards this over a wireless communication channel to a wireless device to activate a stock viewer application to display the alert. In example 21, the reasoning for allowance was stated as:

These limitations, when taken as an ordered combination, provide unconventional steps that confine the abstract idea to a particular useful application. (emphasis added)

It is respectfully submitted that this same reasoning holds true with regard to independent claim 1 of the present application.

Specifically, independent claim 1 clearly confines the invention to a particular useful application of providing notifications to users in certain circumstances, in the same manner in which example 21 provides alerts to users when certain circumstances occur. Specifically, in the present instance, independent claim 1 specifies that a user will be notified and prompted to repeat determining the supply and demand after waiting a first predetermined period of time when the ratio exceeds a second threshold value. Similarly, independent claim 1 further recites that the user will be notified to repeat the determining of the supply and demand after a second

predetermined period of time has passed since the ratio exceeds the first threshold level but does not exceed the second threshold value.

Solely for purposes of non-limiting example, it is noted that these features are discussed in paragraphs [0039] and [0040] of the Applicant's Published Application. In these paragraphs, it is noted that, as an alternative to automatic triggering of the determining of supply and demand, notification can be provided to a human operator to prompt the human operator to repeat determining the supply and demand in response to the relationship of the ratio of supply and demand to the first and second threshold values. As such, independent claim 1 provides a real-time notification feature for a user so that the user can interact with the system to decide whether to repeat determining the supply and demand, as opposed to simple automatic repeating based on software. This claimed arrangement of providing notifications for prompting repeating of operations keeps the user involved with the process, and provides the user with control of the situation.

In addition, it is respectfully submitted that independent claim 1 has the substantial advantage of using an end-of-life purchase to improve cost-effectiveness for the manufacturing of integrated circuit chips. For example, as discussed in paragraph [0004] of the Applicant's Published Application, "It is normally difficult to accurately forecast the projected need for any components." More specifically, as noted in paragraph [0004]:

Moreover, even if the manufacturer can accurately predict the future demand, the manufacturer is still faced with making a one-time purchase of a potentially a large amount of components. This can be problematic in that the manufacturer must expend a large amount of money to pay for the components upfront, and must store and maintain an inventory of the component as it is used during future manufacturing of the product.

On the other hand, as noted in paragraph [0014] of the Applicant's Published Application:

When the ratio is less than the threshold value, a last time buy (LTB) is performed. In this manner, the exposure and vulnerability that result from the end-of-life of a component are reduced.

In other words, by using the method recited in independent claim 1, a considerable cost savings is achievable with regard to end-of-life purchases of components. As such, independent

claim 1 is directed to confining the invention to “a particular useful application” of executing end-of-life purchases for components used for manufacturing integrated circuit chips. Therefore, it is respectfully submitted that the same reasoning used in example 21 applies to independent claim 1 and its dependent claims.

On pages 3 and 4 of the Office Action, the Examiner states that Example 21 is significantly different than the present situation, and that Applicant’s arguments that the claimed recitations regarding notifying/prompting a user to repeat determining supply and demand “clearly admits the determination of the claimed subject matter is performed by a user... Thus, it is an abstract idea.” Applicant respectfully submits that this is not at all the case.

In the first place, it is noted that the claims are limited to a computer device-implemented method which provides notifications to a user so that the user can interact with the computer to make better decisions regarding securing the supply of the article from a supplier. As such, this is not a mere abstract idea performed in the mind of a user. Instead, it requires an interaction between the user and the computer for purposes of obtaining a supply of real-world articles to manufacture real-world integrated circuit chips. None of this is abstract. Quite to the contrary, all of the recited steps pertain to actual manufacturing, and the mere fact that a user is involved in an interactive way certainly does not render the claims to be abstract ideas.

In addition, it is noted that, Example 21 itself is directed to notifying/prompting the user. In that instance, the claims were held to be patent eligible since they were directed to a particular useful application of providing notifications to users in certain circumstances, which is exactly the case with regard to the present claims.

In further regard to this, the Applicant again respectfully submits that the USPTO Subject Matter Eligibility Examples 34-36 are particularly pertinent to the present application. For example, example 34 is particularly directed to the recent Federal Circuit case of *BASCOM Global Internet V. AT&T Mobility LLC*, 119 U.S.P.Q. 2d 1236 (Fed. Cir. 2016), which the Applicant respectfully submits is particularly pertinent to the present claims. *BASCOM* deals with an invention for filtering Internet content based on a comparison of the content with preset restrictions. Regarding this, arguments had been made that all of the elements of the claim were generic and conventional. In response to such arguments, Example 34 notes:

Here, an inventive concept can be found in the unconventional and non-generic combination of known elements, and more specifically “the installation of a filtering tool at a

specific location, remote from the end-users, with customizable filtering features specific to each end-user” where the filtering tool at the ISP is able to “identify individual accounts that communicate with the ISP server, and to associate a request for Internet content with a specific individual account.” The Federal Circuit also determined that the claimed arrangement of elements and the system results in an improvement in the technology of filtering content on the Internet, because it offers “both the benefits of a filter on the local computer, and the benefits of filter on the ISP server.”

The example 34 also states:

Further, these limitations confine the abstract idea to a particular, practical application of the abstract idea and, as explained of the specification, this combination of limitations is not well-understood, routine or conventional activity.... Instead, the claim recites a “technology-based solution” of filtering content on the Internet that overcomes the disadvantages of prior art filtering systems. Thus, when viewed as an ordered combination, the claim limitations amount to significantly more than the abstract idea of content filtering (Step 2Be: Yes). The claim is patent eligible.

Example 36 also presents a very pertinent situation specifically directed to “Tracking Inventory.” In particular, example 36 applies the same reasoning used in example 34, but applies it specifically to a situation where inventory is tracked using tracking devices. For example, with regard to the exemplary claim 2, directed to “A system for managing an inventory record by tracking the location of items of inventory in a warehouse,” an exemplary claim 3, directed to “A system for managing inventory by tracking the location of items of inventory in a warehouse using image recognition,” the example specifically states:

Claims 2 and 3 are directed to the same abstract idea, but are eligible because they recite specific limitations other than what would be well-understood, routine, conventional activities in the field, which amount to significantly more (i.e., provide an inventive concept).

It is respectfully submitted that the present invention presents a very similar situation. In the first place, example 36 makes it clear that keeping track of inventory, which constitutes a collection of physical articles, is patent eligible subject matter. As such, the question then

becomes whether the claimed invention pertains to features which are not conventional or routine in the area of tracking inventory. It is respectfully submitted that, in the present application, the claims are clearly directed to unconventional improvements in the general area of tracking inventory, and the more specific area of determining when to make end-of-life purchases based on the tracking of inventory. The fact that this is an unconventional improvement in a technological area is evidenced by the Examiner's agreement that the claimed subject matter is novel and obvious over the cited prior art.

For example, as noted above, independent claim 1 recites the unconventional steps of notifying a user to prompt repeating the determining the supply and demand under certain conditions regarding the amount of inventory on hand. Similarly, as will be discussed in greater detail in the following section concerning the 35 U.S.C. §103 rejection, independent claim 1 also recites an unconventional step regarding substantially constantly monitoring a rate of increase in demand for the article and repeating the determining step of supply and demand before either the first predetermined period or the second predetermined time period have elapsed if the rate of increase in demand exceeds a predetermined amount. As such, it is respectfully submitted that this is an unconventional solution to the problem of tracking inventory, similar to the situations presented in *BASCOM* and examples 34 and 36.

Further, as was the case in *BASCOM* and examples 34 and 36, the present invention recited in independent claim 1 is directed to a very specific area of technology, namely, making decisions regarding when to repeat determining of supply and demand and went to make an end-of-life purchase of an article for manufacturing integrated circuit chips. As such, it is respectfully submitted that, as stated in examples 34 and 36, "these limitations confine the abstract idea to a particular, practical application of the abstract idea and, as explained in the specification, this combination of limitations is not well-understood, routine or conventional activity." Therefore, as was the case in *BASCOM* and examples 34 and 36, it is respectfully submitted that independent claim 1 is patent eligible subject matter.

Further, independent claim 1 specifically recites "integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip." This is clearly not merely an entrepreneurial solution, as alleged in the Office Action. It is, instead, an actual manufacturing step. Such a manufacturing step cannot be "entirely performed mentally."

Still further, Applicant respectfully submits that the positive recitation of integrating the article with other components to manufacture an integrated circuit chip is clearly a step in a manipulative sense since it requires the manipulation of a number of physical articles. Independent claim 1 also requires specific steps of comparing of ratios with a plurality of thresholds. In addition, independent claim 1 requires substantially constant monitoring of the rate of increase in demand for the article which will be used for manufacturing integrated circuit chips. Further, as noted above, independent claim 1 requires a parts database that notifies the user to prompt the repeating of the determining of the supply of the demand by the user after first and second predetermined time periods have elapsed. As such, it is respectfully submitted that the claim requires far more than operation “and a high level of generality or with the assistance of additional elements performing well known, conventional functions,” as alleged in the Office Action.

On page 4 of the Office Action, the Examiner responds to Applicant’s previous arguments regarding examples 34-36 and *BASCOM* by arguing that:

In contrast, Applicant’s invention related to securing supply of an article which is directed to inventory management system for determining a time for making the last purchase of an end-of-life article, the invention is not necessarily rooted in a computer technology field... Applicant’s invention aims to solve an entrepreneurial idea-“securing a supply of an article”, the claimed determinations can be entirely performed in the human mind, or by a human being using a pen and paper.

Applicant respectfully disagrees. Once again, it is noted that the claims specifically require a computer device-implemented method. The claims further require an interaction between a user and the computer by virtue of providing the notification to the user to prompt the user to repeat the determining of the supply and the demand. This notification cannot “be entirely performed in the human mind, or by a human using a pen and paper.” Further, the constant monitoring of the rate of increase in demand for the article cannot be performed entirely in the human mind or by a human using pen and paper. And, most importantly, the actual manufacturing step of integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip can most certainly not be performed entirely in human mind, or by a human using pen and paper.

In further regard to the present claims, attention is directed to the recent CAFC decision in *Enfish, LLC. v. Microsoft Corporation* (CAFC Docket No. 2015-1244, Decided May 12, 2016). In that case, the CAFC stated:

We do not read *Alice* to broadly hold that all improvements in computer -related technology are inherently abstract and, therefore, must be considered at step two. Indeed, some improvements in computer-related technology when appropriately claimed are undoubtably not abstract, such as chip architecture, an LED display, and the like. Nor do we think that claims directed to software, as opposed to hardware, or inherently abstract and therefore only properly analyzed at the second step of the *Alice* analysis. Software can make non-abstract improvements to computer technology just as hardware improvements can, and sometimes the improvements can be accomplished through either route. We thus see no reason to conclude that all claims directed to improvements in computer-related technology, including those directed to software, are abstract and necessarily analyzed at the second step of *Alice*, nor do we believe that *Alice* so directs. Therefore, we find it relevant to ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea, even at the first step of the *Alice* analysis. (emphasis added)

As such, the issue is not whether the claimed invention is only directed to software, but “whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea.”

In the present instance, it is respectfully submitted that the claimed invention is clearly directed to an improvement to computer functionality with regard to providing a combined hardware/software solution in the technology of manufacturing semiconductor integrated circuit devices. More specifically, the technology involved is the management of the supply of articles for manufacturing the semiconductor integrated circuit devices to ensure that they can, in fact, be manufactured. It is respectfully submitted that the mere fact that a part of the solution entails computer software does not result in the claimed method being ineligible for patent protection. In other words, independent claim 1 recites a combination of steps or elements which provide an improvement in a technology which enhances computer functionality for managing the supply of parts for manufacturing integrated circuit devices. Therefore, it is urged that the present claims do represent patent eligible technology “directed to an improvement to computer functionality” which is indicated as the appropriate test in the *Enfish* decision.

In addition, as previously noted in the last response, Applicant respectfully notes that independent claim 1 specifically recites that the article is “a component for manufacturing integrated circuit chip.” Independent claim 1 is further amended to recite that when the ratio of the supply to the demand is less than or equal to a first threshold value, and end-of-life purchase is made of the article.

Still further, independent claim 1 recites integrating the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip after executing the end-of-life purchase of the article. Solely for purposes of non-limiting example, it is noted that these features are discussed in paragraphs [0042] and [0048] of the Applicants’ Published Application.

With further regard to this issue, it is respectfully submitted that the current independent claim 1 is similar to the claims held to be patent eligible in the case of *SIRF Technology v. ITC*, 601 F.3d 1319 (Fed. Cir. 2010). In the *SIRF Technology* case, a GPS satellite was found to be essential to practicing the claimed method, notwithstanding the presence of mathematical relationships throughout the claims. Specifically, the court found that the GPS satellite was essential for providing the data to be utilized in the mathematical relationships. As particularly stated by the court:

With this interpretation, the presence of the GPS receiver in the claim places a meaningful limit on the scope of the claim. It is essential to the operation of the claimed method and plays a significant part in permitting the claimed method to be performed. As such, although performance of the claim requires calculations, the claim was found eligible.

Similarly, in the present instance, the presence of the component for manufacturing an integrated circuit chip in independent claim 1 places meaningful limitations on the scope of the claim, and is essential to the operation of the claimed method.

Still further, it is respectfully submitted that independent claim 1 very clearly defines that the present invention is directed to a solution of a problem which specifically arises in the technology of manufacturing integrated circuit chips. To this end, in the recent CAFC decision of *DDR Holdings v. Hotels.com*, the CAFC stated:

As an initial matter, it is true that the claims here... involve both a computer and the Internet. But these claims stand apart because they do not merely recite the performance of some business practice known from

the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.

It is respectfully submitted that independent claim 1, like the claims in the DDR case, is clearly necessarily rooted in a hardware technology. In the present instance, this hardware technology is the manufacture of integrated circuit chips. In other words, the present invention is directed to overcoming a problem specifically arising in the manufacture of such integrated circuit chips, that is deciding the most cost-effective time to make an end-of-life purchase of a component which is necessary for the manufacture of such integrated circuit chips. Again, these are improvements in an area of a hardware technology itself, not mere abstract ideas.

Therefore, for the reasons discussed above, it is respectfully submitted that independent claim 1 and its dependent claims are patent-eligible under 35 U.S.C. §101, and reconsideration and removal of this rejection is respectfully requested.

It is also noted that, previously, the Examiner has stated that the present claims are similar to the claims of *Parker v. Flook*, 437 U.S. 584 (S.Ct. 1978) “in being directed to the abstract idea of calculating alarm limit value.” Applicant respectfully traverses these bases for the rejection as well. With regard to Example 21, the Examiner states that this example “addresses the Internet-centric challenge of alerting a subscriber with time sensitive information when the subscriber’s computer is off-line.” The Examiner goes on to state that: “This is applied by transmitting the alert to display and enables the connection of the remote subscriber computer to the data source over the Internet when the remote subscriber computer comes online.” The Examiner further states that the present claimed invention, in contrast, simply claims a method of securing supply of an article which is “directed to inventory management for determining a time for making the last purchase of an end-of-life article.” As such, the Examiner concludes that “the invention is not necessarily rooted in a computer technology field because the claimed neither making an improvement to another technology or technical field, nor making an improvement to the functioning of the computer itself.”

In response, Applicant first respectfully submits that the fundamental principle of Example 21 and the present claimed invention is the same, i.e., notifying a user with an alarm so that the user can take appropriate action when a certain event occurs. To this end, independent claim 1 recites two different instances when the user will be provided with notifications

(equivalent to the alarms of Example 21) which will prompt the user to take appropriate action. Further, independent claim 1 now recites that the articles in question are physical components for manufacturing an integrated circuit chip, and that these articles are stored in a bank which is separate from the user. As such, as shown in FIG. 2 of the present application, independent claim 1 requires communication between a user and a bank storing physical articles, which is remote from the user. This is similar to the situation noted by the Examiner in his remarks in the Advisory Action with regard to transmitting an alert over a wireless communication channel to remotely activate a stock viewer application. In independent claim 1, the user is prompted to repeat determining supply of the physical articles in the bank which is remote from the user.

Further, with regard to the Examiner's allegation on page 4 of the Office Action concerning Example 21 that the claimed invention is not rooted in computer technology because the claimed invention does not make an improvement to another technology or technical field, Applicant respectfully submits that the claimed invention does, indeed, make a specific improvement to the technical field of manufacturing integrated circuit chips. To this end, from the outset, the claimed method now recites "securing supply of an article comprising a physical component for manufacturing an integrated circuit chip." In conjunction with this, the supply of the article is now recited as being located "in a bank where the articles are stored," noting that this is a bank of physical components used for manufacturing an integrated circuit chips, as recited in independent claim 1. Further, when it is determined that the ratio of supply to demand is equal to or less than a first threshold value, a supply of these physical components is secured from the supplier to the user so that the step can be performed of "integrating, via the user, the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip." Still further, as recited in dependent claim 17, the integrating actually comprises the manufacturing of an integrated circuit chip. As such, it is respectfully submitted that the claimed invention is very specifically directed to an improvement in the technology of manufacturing integrated circuit chips.

In further regard to the *Flook* decision, it is noted that this case is discussed as Example 4 and the 2014 Interim Guidance on Patent Subject Matter Eligibility. As pointed out in this Example 4, the claim in question in *Flook* was a method for updating the value of at least one alarm limit on at least one process variable "involved in a process comprising the catalytic chemical conversion of hydrocarbons." Beyond the general reference that the claimed formula

could be used for “catalytic chemical conversion of hydrocarbons,” there was no detailed recitation in the exemplary claim 1 of *Flook* regarding the catalytic chemical conversion of hydrocarbons. Instead, claim 1 of *Flook* simply recited steps to be taken for determining an updated alarm.

Independent claim 1 of the present application, on the other hand, provides a very specific recitations regarding how integrated circuit chips will be manufactured in accordance with the claimed method, with the comparison of the ratios to threshold values being integrated with the claimed manufacturing steps. To begin with, as noted above, independent claim 1 now recites that the articles in question are physical components for manufacturing an integrated circuit chip. Claim 1 also recites determining a supply of these physical components in a bank where these physical components are stored. In conjunction with this, when the comparison of the ratio of supply and demand to respective threshold values indicates that an end-of-life purchase of the articles should be made, independent claim 1 recites securing a supply of the article from the supplier to the user. Once this is done, independent claim 1 recites the manufacturing step of “integrating, via the user, the article with chips, discrete circuit elements or signal processing devices to manufacture an integrated circuit chip.” As such, unlike *Flook*, where the claims only recited general reference to a field of use for the claimed formula, independent claim 1 recites very specific manufacturing steps involving the handling of physical articles to provide a real-world physical product at the end of the claimed process. Therefore, it is respectfully submitted that *Flook* does not apply to the present claims.

On pages 4 and 5 of the Office Action, the Examiner states that the Applicant’s invention aims only to solve an entrepreneurial problem of securing a supply of an article which can be performed entirely by the human mind or by a human using pen and paper. The Examiner particularly points to the claim language regarding notifying the user to repeat the determining. Again, Applicant respectfully traverses this basis of the rejection.

In the first place, from the very outset the claim states that it is directed, therefore limited, to a “computer device-implemented method of securing supply of an article comprising a physical component for manufacturing an integrated circuit chip.” Therefore, clearly, the claimed method cannot be performed “entirely by the human mind or by human using pen and paper.” In the first place, the claim is very specifically limited to requiring the method to be implemented on a computer device. Further, the claim is directed to real-world items, that is “a physical

component for manufacturing an integrated circuit chip.” Such physical components for manufacturing integrated circuit chips cannot be performed in the human mind or by using a pen and paper. Still further, the claim requires integrating, via the user, the article with physical elements, such as chips, to manufacture an integrated circuit chip. Again, these cannot be performed solely in the human mind or by human using pen and paper.

On pages 5 and 6 of the Office Action, the Examiner argues that the claim limitation regarding integrating the article with physical elements such as chips to manufacture an integrated circuit chip is a step that may never be executed, and, even if it is executed, the Examiner regards it as “an insignificant post-solution activity as it is unrelated to the other steps in the claim.” Applicant respectfully points out that the step itself is clearly related to the other steps in the claim by virtue of the paragraph regarding “integrating” being performed “after executing the end-of-life purchase of the article.” Further, from the outset, the claim pertains to securing supply of an article “comprising a physical component for manufacturing an integrated circuit chip.” Therefore, even if one regards the claimed invention as being directed to an abstract idea, it is respectfully submitted that it is clearly very limited to a certain part of the specific technology, that is providing physical components for manufacturing integrated circuit chips, and, as such, falls within the purview of both example 21 and *BASCOM* regarding inventions which are confined to “a particular useful application.”

Accordingly, for the reasons discussed above, reconsideration and removal of the 35 U.S.C. §101 rejection of claim 1 and its dependent claims is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 09-0458.

Respectfully submitted,



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AMENDMENTS TO THE CLAIMS

Please **AMEND** claims 1 and 8 as follows.

A copy of all pending claims and a status of the claims are provided below.

1. (Currently amended) A method of manufacturing an integrated circuit chip comprising: ~~computer device-implemented method of securing, using a computer device-~~ implemented method, a supply of an article comprising a physical component for manufacturing [[an]] the integrated circuit chip, the computer device-implemented method of securing the supply of the article comprising:

determining a supply of the article in a bank, separate from the user, where the article is stored, and determining a demand of the article;

comparing a ratio of the supply to the demand to a first threshold value associated with an end-of-life purchase of the article;

determining the ratio exceeds the first threshold value;

based on the determining the ratio exceeds the first threshold value, comparing the ratio to a second threshold value;

when the ratio exceeds the second threshold value, waiting a first predetermined time period and then notifying a user to prompt the user to repeat the determining the supply and the demand;

when the ratio exceeds the first threshold level but does not exceed the second threshold value, waiting a second predetermined time period and then notifying the user to prompt the user to repeat the determining the supply and the demand;

determining the ratio is equal to or less than the first threshold value, and, when the ratio is less than or equal to the first threshold value, executing the end-of-life purchase of the article to secure a supply of the article from the supplier to the user, and

~~substantially~~ constantly monitoring a rate of increase in demand for the article and repeating the determining step of supply and demand before either the first predetermined time period or the second predetermined time period have elapsed if the rate of increase in demand exceeds a predetermined amount; and

manufacturing the integrated circuit chip by integrating, via the user, the article with chips, discrete circuit elements or signal processing devices ~~to manufacture an integrated circuit chip~~, after executing the end-of-life purchase of the article,

wherein the first threshold value is less than the second threshold value,
the first predetermined time period is greater than the second predetermined time period,
the determining the supply and the demand comprises querying an inventory of the bank where the article is located, and summing demand from plural demand sources using a computer device, and

the computer device comprises a parts database.

2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein:
the first threshold value, the second threshold value, the first time period, and the second time period are maintained as data fields in the parts database; and
the data fields are associated with a part number or a serial number of the article.

4. (Canceled)

5. (Original) The method of claim 1, wherein the comparing the ratio to the second threshold value when the ratio exceeds the first threshold value provides an indication of when the first threshold value is being approached.

6 - 7. (Canceled)

8. (Currently Amended) The method of claim 1, further comprising ~~substantially~~ constantly monitoring a predetermined parameter and repeating the determining step of supply and demand before either the first predetermined time period or the second predetermined time period have elapsed when a predetermined condition regarding the predetermined parameter is determined to exist.

9. (Previously Presented) The method of claim 8, wherein the predetermined parameter is a current date and the predetermined condition is a cut off date.

10. - 12. (Canceled)

13. (Previously Presented) The method of claim 1, wherein the component comprises a chip in raw wafer form.

14. (Previously Presented) The method of claim 13, wherein the integrated circuit chip comprises a multichip package.

15. (Previously Presented) The method of claim 1, wherein the bank comprises a semiconductor die bank and the article comprises semiconductor dies stored in the semiconductor die bank.

16. (Previously Presented) The method of claim 15, wherein determining the supply of the article is performed by querying an inventory manager of the bank.

17. (Previously Presented) The method of claim 15, wherein the integrating comprises manufacturing an integrated circuit chip.

18. (Previously Presented) The method of claim 9, wherein the cutoff date is stored in the parts database.

19. (Previously Presented) The method of claim 18, wherein, when the current date equals the cut off date, a determination is made of the supply of the article and the demand of the article regardless of time remaining in the first and second predetermined time periods.

20. (Previously Presented) The method of claim 1, wherein the user comprises an assembler of the computer device.