



UNITED STATES PATENT AND TRADEMARK OFFICE

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.
13/891,640	05/10/2013	Stephen Michael Hammers	079899-00002US	2359
27805	7590	09/14/2018	EXAMINER	
THOMPSON HINE L.L.P. 10050 Innovation Drive Suite 400 DAYTON, OH 45342-4934			FU, HAO	
			ART UNIT	PAPER NUMBER
			3697	
			NOTIFICATION DATE	DELIVERY MODE
			09/14/2018	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):

ipdocket@thompsonhine.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEPHEN MICHAEL HAMMERS

Appeal 2017-004629
Application 13/891,640
Technology Center 3600

Before ROBERT E. NAPPI, JUSTIN BUSCH, and CATHERINE SHIANG,
Administrative Patent Judges.

BUSCH, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant appeals from the Examiner's decision to reject claims 1–20 and 32–35, which constitute all the claims pending in this application. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b). We affirm.

CLAIMED SUBJECT MATTER

Appellant's claimed invention is generally directed to methods for generating an investment index where the individual stocks or derivatives

are weighted based on volatility. Spec. ¶¶ 2–4, Abstract. Claims 1, 20, and 32 are independent claims. Claim 1 is reproduced below:

1. A method for generating an investment vehicle index comprising:
 - selecting or receiving a universe of stocks or derivatives;
 - selecting, by a computer, out of the universe of stocks or derivatives, only those that meet at least one performance criteria, resulting in a first subset;
 - selecting, by the computer, out of the first subset, stocks or derivatives based upon at least one characteristic of the entity associated with each stock or derivative resulting in a second subset; and
 - weighting, by the computer, the second subset of stocks or derivatives based upon a standard deviation of volatility to generate an index of volatility-weighted stocks or derivatives.

REJECTIONS

Claims 1–20 and 32–35 stand rejected under 35 U.S.C. § 101 as being directed to ineligible subject matter. Final Act. 7–10.

Claims 1–11, 14, 15, 17–20, 32, and 33 stand rejected under 35 U.S.C. § 103 as obvious in view of Steinberg (US 8,131,620 B2; Mar. 6, 2012) and Hsu (US 2012/0246094 A1; Sept. 27, 2012). Final Act. 10–15.

Claims 12 and 13 stand rejected under 35 U.S.C. § 103 as obvious in view of Steinberg, Hsu, and Creager (US 2006/0229963 A1; Oct. 12, 2006). Final Act. 15–16.

Claim 16 stands rejected under 35 U.S.C. § 103 as obvious in view of Steinberg, Hsu, and Boyle (US 7,340,425 B2; Mar. 4, 2008). Final Act. 16–17.

Claims 34 and 35 stand rejected under 35 U.S.C. § 103 as obvious in view of Steinberg, Hsu, and Appellant Admitted Prior Art (AAPA). Final Act. 17–18.

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellant’s arguments that the Examiner erred. In reaching this decision, we have considered all evidence presented and all arguments Appellant made. Arguments Appellant could have made, but chose not to make in the Briefs, are deemed waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

THE § 101 REJECTION

The Examiner concludes claims 1–20 and 32–35 are directed to judicially excepted subject matter. Final Act. 7–10; Ans. 3–8. Appellant argues the Examiner has not presented a prima facie case that claim 1 is ineligible, the limitations in the claims recite significantly more than the abstract idea, and the Examiner has not considered whether the additional limitations in the dependent claims amount to significantly more than the abstract idea. *See* App. Br. 5–8.

Alice/Mayo Framework

The Patent Act defines patent-eligible subject matter broadly: “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.” 35 U.S.C. § 101. There is no dispute that claims 1–20 and 32–35 are directed to one of these categories.

In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012) and *Alice Corp. Pty. Ltd. v. CLS Bank International*, 134 S. Ct. 2347, 2354 (2014), the Supreme Court explained that § 101 “contains an important implicit exception” for laws of nature, natural phenomena, and abstract ideas. *See Diamond v. Diehr*, 450 U.S. 175, 185

(1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent-eligible subject matter: (1) “determine whether the claims at issue are directed to” a patent-ineligible concept, such as an abstract idea; and, if so, (2) “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements” add enough to transform the “nature of the claim” into “significantly more” than a patent-ineligible concept. *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 79); see *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Step one in the *Mayo/Alice* framework involves looking at the “focus” of the claims at issue and their “character as a whole.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). Step two involves the search for an “inventive concept.” *Alice*, 134 S. Ct. at 2355; *Elec. Power*, 830 F.3d at 1353. For an inventive concept, “more is required than ‘well-understood, routine, conventional activity already engaged in’” by the relevant community. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 79–80).

Step One of Alice Framework

Turning to step one of the *Alice* framework, the Examiner determines the claims are directed towards generating an investment index, which the Examiner concludes is an abstract idea because it is a fundamental economic practice and generating the index is an abstract concept that can be done mentally. Final Act. 2–3, 7–9; Ans. 3–4. The Examiner also concludes the claims are directed to the abstract idea of organizing information through mathematical correlations because the claimed process simply selects and weights stocks using mathematical correlations. Ans. 3 (citing *Digitech*

Image Techs., LLC v. Elecs. For Imaging, Inc., 758 F.3d 1344 (Fed. Cir. 2014)). The Examiner determines Appellant’s claims recite methods that could be done without using a computer and merely use a computer as a tool, which is different from claims found to be directed to improvements in computer technology. Ans. 3 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016)); *see also* Final Act. 4 (explaining that claims 32–35 are not even tied to a computer).

Appellant argues the Examiner failed to make a prima facie case that claim 1 is ineligible because the Examiner has not demonstrated Appellant’s claims are similar to claims found ineligible by the Supreme Court or the Federal Circuit. App. Br. 5–6. Appellant also argues the claims may *involve* weighting certain assets, but the Examiner erred in concluding the “claims are directed to the abstract idea of ‘weighting selected investment assets’.” App. Br. 5.

Claim 1 is a method that recites only four steps, namely: (1) selecting or receiving a set of stocks or derivatives; (2) selecting a subset of the stocks or derivatives based on performance criteria; (3) selecting a second subset, out of the first subset, based on a characteristic of the entity associated with each stock or derivative; and (4) weighting the second subset based on volatility. Claim 1 recites that a computer performs steps 2–4.

We are not persuaded the Examiner’s characterization of claim 1 is incorrect. Contrary to Appellant’s assertion, App. Br. 5, the Examiner determines claim 1 is directed to generating an investment index by selecting and weighting stocks, not just weighting selected investment assets, Final Act. 2–3, 8–9. Appellant argues the Examiner has not identified relevant

cases, but Appellant does not contest the Examiner’s actual characterization or that the claims are directed to a fundamental economic practice and automating mental tasks. We agree with the Examiner’s characterization. We also agree with the Examiner that generating an investment index by selecting and weighting stocks is an abstract idea because it is a mental process (or an idea of itself) and a fundamental economic practice. *See* Final Act. 2–3. 8–9.

The Federal Circuit has concluded mental processes, even when performed by a computer, are ineligible abstract ideas. Specifically, the Federal Circuit explained that “purely mental processes can be unpatentable, even when performed by a computer.” *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375–76 (Fed. Cir. 2011). The claims in *CyberSource* recited steps for verifying credit card transactions over the Internet. *CyberSource*, 654 F.3d at 1370. The Federal Circuit agreed with the district court that the claimed method “simply requires one to ‘obtain and compare intangible data pertinent to business risks.’” *CyberSource*, 654 F.3d at 1370 (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 620 F.Supp.2d 1068, 1078 (N.D. Cal. Mar. 27, 2009)). The Federal Circuit also determined a computer-implementation of essentially the same method claiming a mental process was ineligible. *CyberSource*, 654 F.3d at 1375 (“That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.”).

Accordingly, we agree with the Examiner that claim 1 is directed to an abstract idea. Therefore, we turn to step 2 of the *Alice* analysis.

Step Two of Alice Framework

Next, we turn to step two of *Alice* to determine whether the *additional* limitations, when considered both “individually and ‘as an ordered combination’” contain an “inventive concept” sufficient to transform the claimed “abstract idea” into a patent-eligible application. *Alice*, 134 S. Ct. at 2355–58.

The Examiner concludes Appellant’s claims merely automate a mental process using a general purpose computer and, therefore, include no additional limitations amounting to significantly more than the abstract idea. Final Act. 3, 9; Ans. 5. The Examiner explains that the additional elements in the claim (i.e., the general purpose computer) do not address an improvement in the computer or another technology. Ans. 5. Rather, the Examiner determines the problems Appellant identifies in the prior art that the claims allegedly address are not related to a deficiency in computer technology, but to the abstract idea of the indexes themselves (e.g., over-representation of a country in an index, as recited in claim 17). Ans. 6. The Examiner explains the solution, therefore, is not rooted in technology because the process can be performed in the human mind. Ans. 6. The Examiner then addresses the additional elements in each of the dependent claims. Ans. 6–7.

Appellant argues the claims recite significantly more than the abstract idea itself because the claims recite “a specific combination of features that is other than what is well-understood, routine, conventional activity in the relevant field to solve a deficiency in computer technology.” App. Br. 6–8; Reply Br. 2–3. In particular, Appellant asserts existing indexes do not address certain features or factors, such as volatility and over-representation

of a particular country. App. Br. 6–7. Appellant contends “the claims recite a new approach for determining a stock index that takes into account a standard deviation of volatility.” App. Br. 7. Appellant also argues the claimed methods cannot be performed by a human because of the “high volume of time-sensitive data needing to be tracked.” Reply Br. 3 (quoting Spec. ¶ 52). Appellant asserts “the claims improve computer-related technology by allowing computer performance of a function not previously performable by a computer, which is similar to the claims at issue in *McRO* [*Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)], and thereby amounts to significantly more than an abstract idea.” Reply Br. 3.

Appellant’s claims do not require tracking high volumes of data or any time constraints. Rather the claims merely recite selecting and weighting particular stocks to create an index. Therefore, we are not persuaded by Appellant’s assertion that a human cannot perform the claimed process due to the need to track a high volume of time-sensitive data.

Nor are we persuaded *McRO*’s reasoning is applicable to Appellant’s claims. On the contrary, claim 1 recites the routine use of conventional computer components to perform the recited method steps that constitute the abstract idea. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (“[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.”); *see also Intellectual Ventures I LLC v. Capital One Bank*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) (“[O]ur precedent is clear that merely adding computer functionality to increase the speed or efficiency of the

process does not confer patent eligibility on an otherwise abstract idea.”); *Alice*, 134 S. Ct. at 2358–59.

We agree with the Examiner that Appellant’s claims do not improve a computer or another technology. Appellant’s argument to the contrary—i.e., that improving an index improves some technology—is unpersuasive. Other than a general conclusion that Appellant’s claims improve indexing, Appellant does not provide persuasive evidence or explanation how improving indexing improves another technology or otherwise adds significantly more to the abstract idea.

Accordingly, the claimed limitations, considered both individually and together, do not add significantly more to the abstract idea and, therefore, do not render the subject matter patent eligible.

Summary

For the above reasons, Appellant has not persuaded us the Examiner erred in rejecting claims 1–20 and 32–35 under 35 U.S.C. § 101 as being directed to merely an abstract idea, rendering the claimed subject matter ineligible.

THE § 103 REJECTIONS

Claims 1–11, 14, 15, 17–20, 32, and 33

The Examiner finds the combination of Steinberg and Hsu teaches or suggests every limitation recited in claims 1–11, 14, 15, 17–20, 32, and 33. Final Act. 4–6, 10–15. The Examiner finds Steinberg teaches generating an index by selecting stocks that match certain criteria, further narrowing the selected stocks based on a characteristic of the entity associated with the stock, and weighting the subset of stocks. Final Act. 10–11; Ans. 8. The Examiner acknowledges Steinberg does not teach weighting based on a

standard deviation of volatility, but relies on Hsu for teaching this limitation. Final Act. 11; Ans. 8. The Examiner recognizes that Hsu weights asset classes in a portfolio rather than individual stocks, but determines the principle of volatility-weighting an asset class can be applied to individual stocks, which results in shifting the overall volatility of an index or portfolio. Final Act. 11; Ans. 8.

The Examiner finds an ordinarily skilled artisan would have been motivated to apply Hsu's teachings regarding volatility to Steinberg's teachings regarding determining an index in order to achieve a desired overall volatility of the index. Final Act. 11; Ans. 8–9. The Examiner further notes Steinberg indicates an index can be weighted by any of various known weighting methodologies. Final Act. 5 (citing Steinberg 18:22–28); Ans. 8. The Examiner explains that the combination merely involves applying one known technique to a known method, which yields predictable results. Final Act. 11–12; Ans. 8–9.

Appellant argues the claims are patentable because there is no reason to combine Steinberg and Hsu. App. Br. 9–10; Reply Br. 4. Appellant contends “that volatility weighting asset classes for inclusion in a diversified portfolio is a separate and distinct factor in portfolio construction as compared to weighting an individual security for inclusion in an index.” App. Br. 9 (emphasis omitted); Reply Br. 4. Appellant argues that asset classes and individual holdings have different risk characteristics and asset classes have risk characteristics “which cannot be diversified away through weighting or otherwise.” App. Br. 9. Appellant then concludes a person of ordinary skill in the art “would not have a reason to combine the teachings of Steinberg and Hsu.” App. Br. 10; Reply Br. 4.

Appellant does not contest the individual teachings of either Steinberg or Hsu and merely contends a person of ordinary skill would not have combined their respective teachings. The Examiner cites Hsu for the limited purpose of demonstrating that the principle of weighting holdings by a standard deviation of volatility was known in the art. *See* Final Act. 5; Ans. 9. The Examiner provides a rationale with a reasonable underpinning for combining the asserted teachings and further explains that an ordinarily skilled artisan would have understood Hsu's principle of weighting by volatility would be equally applicable to weighting individual holdings. Regardless of whether the risk characteristics may be different when analyzing asset classes versus individual holdings, Appellant has identified insufficient evidence or reasoning to persuade us a person of ordinary skill in the art would not have found Hsu's volatility equally applicable to Steinberg's method.

Therefore, we are not persuaded the Examiner erred in determining the combination of Steinberg and Hsu teaches or suggests the subject matter recited in claims 1–11, 14, 15, 17–20, 32, and 33.

Claims 12 and 13

The Examiner rejects claims 12 and 13 as obvious in view of Steinberg, Hsu, and Creager. Final Act. 15–16. Appellant does not contest the findings with respect to the respective teachings of Steinberg, Hsu, and Creager. Appellant argues only that claims 12 and 13 are patentable for the same reason as argued with respect to claim 1, from which claims 12 and 13 depend. Therefore, we are not persuaded the Examiner erred in determining the combination of Steinberg, Hsu, and Creager teaches or suggests the subject matter recited in claims 12 and 13.

Claim 16

The Examiner rejects claim 16 as obvious in view of Steinberg, Hsu, and Boyle. Final Act. 16–17. Appellant does not contest the findings with respect to the respective teachings of Steinberg, Hsu, and Boyle. Appellant argues only that claim 16 is patentable for the same reason as argued with respect to claim 1, from which claim 16 depends. Therefore, we are not persuaded the Examiner erred in determining the combination of Steinberg, Hsu, and Boyle teaches or suggests the subject matter recited in claim 16.

Claims 34 and 35

The Examiner takes Official Notice that repeating the known process at a periodic interval and, more specifically, every 180 days, was known and would have been obvious to a person of ordinary skill in the art. Final Act. 17. The Examiner finds Appellant’s traverse of the Examiner’s taking of Official Notice was inadequate because Appellant has “not shown or point[ed] out any factual evidence which suggest the feature(s) in question was/were not old and well known.” Final Act. 6. The Examiner, therefore, treats this subject matter as Appellant Admitted Prior Art (“AAPA”). Final Act. 17–18. The Examiner then concludes it would have been obvious to a person of ordinary skill in the art to modify Steinberg and Hsu with AAPA because it merely involves repeating a known process. Final Act. 6, 18.

Appellant “do[es] not believe that weighting a set of stocks or derivatives at periodic intervals of time, such as 180 days, is a known process for generating an investment index,” and argues the Examiner provided no support of the taking of Official Notice in response to Appellant’s traverse of the Examiner’s taking of Official Notice. App.

Br. 11. Appellant asserts the Examiner's failure to provide supporting evidence is fatal to the Examiner's taking of Official Notice. App. Br. 12.

Appellant merely asserts a belief that weighting an index periodically is not a well-known process, but does not argue *why* the noticed fact is not considered common knowledge.¹ Moreover, the Examiner finds the "S&P Greater China 50 Index is rebalance[d] semiannually." Ans. 9–10.

Furthermore, Steinberg provides support for the Examiner's taking of Official Notice. Steinberg 13:5–9 ("Reweighting,' as used herein, refers to the process of determining each security's weighting percentage within the financial instrument and may occur quarterly, semi-annually or annually at the reconstitution date."), 13:41–45 ("Similar to reconstitution, reweighting the index according to the above-referenced process may occur at any time, or at regular predetermined intervals, such as weekly, monthly, quarterly, annually, and so on."). Accordingly, on this record, we are not persuaded the Examiner erred in rejecting claims 34 and 35 as obvious in view of Steinberg, Hsu, and Official Notice.

DECISION

We affirm the Examiner's decision to reject claims 1–20 and 32–35 under 35 U.S.C. § 101.

¹ To traverse the Examiner's taking of Official Notice, Appellant must specifically point out the supposed errors in the Examiner's action, *which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art*. See MPEP § 2144.03 (emphasis added). An adequate traverse of the Examiner's taking of Official Notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the Examiner's notice of what is well known to one of ordinary skill in the art. *In re Boon*, 439 F.2d 724, 728 (CCPA 1971).

Appeal 2017-004629
Application 13/891,640

We affirm the Examiner's decision to reject claims 1–20 and 32–35 under 35 U.S.C. § 103.

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

AFFIRMED