UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SAMIR VARMA
Appellant

Appeal 2014-007760
Reexamination Control No. 90/012,366
Patent 6,349,291
Technology Center 3900

Before JOHN A. JEFFERY, ERIC B. CHEN, and ANDREW J. DILLON, *Administrative Patent Judges*.

DILLON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 22-25. Claims 1-21 and 29-31 were not subject to reexamination, claims 26-28 have been held patentable. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

Appellant's invention is directed to a method and system for the

statistical analysis, display, and dissemination of financial data over an information network such as the Internet and the World Wide Web (WWW). *See* Abstract.

Claim 22 is illustrative, with key disputed limitations emphasized:

22. A system for providing statistical analysis of investment information over an information network comprising:

a financial data database for storing investment data;

a client database;

a plurality of processors collectively arranged to perform a parallel processing computation, wherein the plurality of processors is adapted to:

receive a statistical analysis request corresponding to a two or more selected investments;

based upon investment data pertaining to the two or more selected investments, perform a resampled statistical analysis to generate a resampled distribution: and,

provide a report of the resampled distribution.

The Examiner relies on the following as evidence of unpatentability:

Maggioncalda US 6,012,044 Jan. 4, 2000
Frank A. Sortino, *The Look of Uncertainty,* Investing Magazine, Winter 1990 ("Sortino")
Jérôme Barraquand, *Monte Carlo integration, quadratic resampling, and asset pricing,* Mathematics and Computers in Simulation, Vol. 38, pp. 173-182 ("Barraquand")

THE REJECTION

The Examiner rejected claims 22-25 under 35 U.S.C. §103(a) as unpatentable over Sortino, Maggioncalda, and Barraquand. Ans. 2-3.[1]

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's contentions in the Appeal Brief (App. Br. 1-63) and the Reply Brief (Reply Br. 1-20) that the Examiner has erred. We disagree with Appellant's conclusions. We adopt as our own the reasons set forth by the Examiner in the Examiner's Answer in response to Appellant's Appeal Brief (Ans. 2-22). We highlight and amplify certain teachings and suggestions of the references as follows.

Appellant argues the Examiner erred in rejecting claims 22-25 based upon the failure of the cited references to show or suggest the following three features:

1. A statistical analysis request that corresponds to two or more investments, and a resampled statistical analysis performed based upon investment data pertaining to two or more investments, or

2. A bias parameter that determines a degree of randomness in sample selection in a resampling process, or

3. A plurality of processors collectively arranged to perform a parallel processing computation and adapted to receive a statistical analysis request corresponding to two or more

[1] Throughout this opinion, we refer to the Appeal Brief filed December 16, 2013; the Examiner's Answer mailed April 11, 2014; and, the Reply Brief filed June 11, 2014.

> selected investments and, based upon investment data pertaining to the two or more selected investments perform a resampled statistical analysis.

App. Br. 1.

Feature 1

Specifically, Appellant urges that claims 22, 23, and 25 are patentable as none of the cited references discloses a system "adapted to receive a statistical analysis request corresponding to two or more selected investments" or a system which "perform a resampled statistical analysis" "based upon investment data pertaining to two or more selected investments." Appellant further argues that in view of the recitation of "a request" which corresponds to "two or more selected investments" Sortino cannot suggest the claimed invention since Sortino would require two requests in order to operate on two investments. App. Br. 8, 16, Reply Br. 3-4.

Appellant also argues that Sortino only discloses a statistical analysis request corresponding to "a selected investment" and not "two or more investments" as claimed. *Id.* at 9, 12. With respect to the "resampled statistical analysis," Appellant argues that Sortino utilizes a "distinct bootstrap procedure" for each of seven sub-periods called scenarios, then generates a distribution for each scenario and then linearly weights the distributions. *Id.* at 14.

Regarding Appellant's argument relating to "two or more investments," the Examiner finds that Appellant has improperly narrowed the claims by importing disclosed, but unclaimed functions, into the claims on appeal. Specifically, the Examiner notes that Appellant's claims do not

recite that the "two or more investments" are analyzed at the same time, and also notes that Sortino discloses analysis of the S&P 500 index, which comprises 500 underlying stocks (or investments). Ans. 11.

We agree with the Examiner. The absence of a temporal limitation from Appellant's claims indicating that "two or more investments" are analyzed at the same time leads us to conclude that Sortino suggests the ability to analyze "two or more investments." Regarding Appellant's argument that two requests would be necessary in the Sortino system to accomplish an analysis of "two or more investments" we note that Appellant utilizes the transitional term "comprising." "The transitional term 'comprising' . . . is inclusive or open-ended and does not exclude additional, unrecited elements or method steps." *Georgia-Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1327 (Fed. Cir. 1999) (citing MPEP § 2111.03 (6th ed.1997)). "A drafter uses the term 'comprising' to mean 'I claim at least what follows and potentially more.'" *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1383 (Fed. Cir. 2000).

Further, Appellant's claim recites "a statistical analysis request." "[A]n indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000). To be sure, "[w]hen the claim language and specification indicate that 'a' means one and only one, it is appropriate to construe it as such even in the context of an open-ended 'comprising' claim." *Harari v. Lee*, 656 F.3d 1331, 1341 (Fed. Cir. 2011). But that exception is not the case here, nor has Appellant shown as much on this record. Consequently,

we find that a system such as that disclosed by Sortino, that may utilize multiple "requests" to analyze "two or more investments," shows or suggests the claimed feature.

With regard to Appellant's argument that the cited references fail to show or suggest a "resampled statistical analysis," the Examiner cites Exhibit IV of Sortino, noting that Sortino describes an analysis of S&P 500 distributions and then a subsequent (or resampled) analysis. The Examiner finds that Appellant has improperly attempted to narrow the definition of "resampling" beyond that set forth in the original specification. Ans. 2, 7-8.

Once again we agree with the Examiner. Nothing within Appellant's specification would lead one of ordinary skill in the art to the proposed definition of "resampling." Further, we find that the various iterations of S&P 500 distributions disclosed within Sortino meet the claimed "resampled statistical analysis" of Appellant's claims. We, therefore, find that Sortino shows or suggests the claimed "resampled statistical analysis."

Feature 2

Regarding the "bias parameter that determines a degree of randomness in sample selection in a resampling process," Appellant argues that claim 24 should be allowed "because none of the references teach a bias parameter that determines a degree of randomness in sample selection in a resampling process." App. Br. 36.

With particularity, Appellant argues that the Request is in error by asserting that "Sortino further discloses a bias parameter (reshaping the sampled (historic) data) by its approach of dividing investment data into scenarios such as recession, growth, or inflation, and then assigning a

probability percentage (bias parameter) to each scenario for analysis by the bootstrap method." (Request at 32 and 34.) App. Br. 37-38.

. The Examiner once again points out that Appellant has improperly narrowed the definition of "resampled" without any evidence that Appellant "acted as their own lexicographer." Ans. 7.

Further, the Examiner finds that there is no temporal requirement within the claim that mandates that the bias parameter must be applied at the start of the sample selection, rather than after an initial sample selection. The Examiner finds that Sortino discusses the statistical bootstrap method which utilizes a bias in sample selection during the resampling process. *Id.* at 10.

We find that claim 24 does not mandate that the bias parameter be utilized during initial sample selection. We further find that Sortino teaches the application of bias after an initial selection by application of the various enumerated scenarios, noted above. We, therefore, find that Sortino shows or suggests the "bias parameter that determines a degree of randomness in sample selection in a resampling process" set forth in claim 24.

Feature 3

Appellant argues that claims 22-25 are allowable in view of the failure of the cited references to disclose performing "a parallel processing computation and resampled statistical analysis corresponding to two or more investments." App. Br. 18.

Appellant admits that Barraquand discloses a "plurality of processors" which does in fact "perform a parallel processing computation," but argues that Barraquand fails to disclose that the "plurality of processors" must also

be "adapted to" "receive a statistical analysis request corresponding to two or more selected investments" and "perform a resampled statistical analysis to generate a resampled distribution . . . based upon investment data pertaining to the two or more selected investments." *Id.* at 21-22.

The Examiner finds that Barraquand is relied upon merely for the teaching of a plurality of processors performing parallel computation. Consequently, the Examiner finds that Appellant's argument that the plurality of processors are not "adapted to" "receive a statistical analysis request corresponding to two or more selected investments" and "perform a resampled statistical analysis to generate a resampled distribution . . . based upon investment data pertaining to the two or more selected investments." Ans. 16, 19.

We find the Examiner's position persuasive. In arguing the inappropriate nature of the Examiner's citation of Barraquand for a failure to disclose features which the Examiner has plainly stated are provided by another reference, the Appellant is arguing the references piecemeal.

"The test for obviousness is not whether . . . the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (citations omitted). "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references." *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *Keller*, 642 F.2d at 425). In determining

obviousness, furthermore, a reference "must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole." *Id.*

Here, the Examiner relies on the combined teachings of Sortino, Maggioncalda, and Barraquand (in combination with the prior art as a whole) to reject the limitations at issue. Consequently, the Appellant's individual attack on Barraquand cannot establish non-obviousness.

Other Issues

Appellant also argues that Maggioncalda fails to teach "a system for parallel processing resampled statistical analysis requests corresponding to two or more investments," and that nothing within Maggioncalda explains "how it could be adapted to be combined with Sortino to receive or perform the resampled statistical analysis requests that would be based on two or more investments. App. Br. 17-18.

The Examiner cites Maggioncalda for a teaching of a financial data database for storing investment data. Ans. 2.

We find that Appellant is once again attacking the references in a piecemeal fashion, rather than what the references would suggest to one of ordinary skill in the art when viewed together.

Further, we find Appellant's arguments regarding the failure of Maggioncalda to suggest how that reference could be combined with Sortino to be unavailing.

"[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review." *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983); *In re Andersen*, 391

F.2d 953, 958 (CCPA 1968)); *see also In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) ("Combining the *teachings* of references does not involve an ability to combine their specific structures."). "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference . . . . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *Keller*, 642 F.2d at 425 (citations omitted).

Appellant makes similar ineffective arguments regarding a perceived inability of Barraquand to be combined with Sortino and Maggioncalda, and an assertion that one of ordinary skill in the art would not have turned to Barraquand to solve the problem set forth in Appellant's patent. App. Br. 24-25.

For the reasons we set forth above, regarding both the Examiner's stated purpose in the citation of Barraquand, as well as the settled law regarding whether or not references must be physically combinable, we are not persuaded by Appellant's argument.

Appellant also argues that parallel processing, as taught by Barraquand, is not necessarily properly combined with Sortino, noting the increased complexity and lack of practical benefits. App. Br. 29-32.

In response, the Examiner finds that parallel processing computation, as described by Barraquand, would have been obvious to one of ordinary skill in the art at the time of the invention, as an approach which would speed up the process of Sortino by repeatedly updating the reporting of investment data. Ans. 17.

We agree with the Examiner. We find nothing excessively complex in the application of parallel processing to the process of Sortino to render such an application beyond the level of ordinarily skilled artisans. Moreover, such parallel processing would have been obvious to one of ordinary skill in the art when considering a repetitive/iterative process such as that disclosed by Sortino. Such an enhancement predictably uses prior art elements according to their established functions—an obvious improvement. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007)

Appellant argues the allowability of claim 23 based upon the recitation of the provision of a "resampled distribution plot." App. Br. 34-35.

The Examiner finds that Sortino depicts a plot of the resampled distribution of the S&P 500 distributions within Exhibit IV thereof. Ans. 3.

We find the Examiner's position persuasive, noting Appellant failed to respond to the Examiner's position with respect to claim 23 in the Reply Brief filed June 11, 2014.

Graham Factors

Appellant argues that claims 22-25 were improperly rejected under 35 U.S.C. §103(a) because the Examiner failed to properly consider the Graham obviousness factors including: determining the scope and content of the prior art; ascertaining the differences between the claimed invention and the content of the prior art; and, resolving the level of ordinary skill in the pertinent art. App. Br. 51

In paragraphs 4 and 5 of the Final Rejection dated July 3, 2013, the Examiner sets forth with great detail the scope and content of the prior art,

and notes that there are no structural differences between the combined references and the claimed invention. (*See* Final Rej. at 23-24). The Examiner incorporates this reasoning into the Answer at page 2. Further, with respect to resolving the level of ordinary skill in the art, the references represent the level of ordinary skill in the art. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (finding that the Board of Patent Appeals and Interferences did not err in concluding that the level of ordinary skill was best determined by the references of record); *In re Oelrich*, 579 F.2d 86, 91(CCPA 1978) ("[T]he PTO usually must evaluate . . . the level of ordinary skill solely on the cold words of the literature.").

Expert Declarations

Appellant argues that the Examiner failed to properly consider objective evidence regarding the differences between the prior art and the claimed invention. Specifically, Appellant argues that the Examiner failed to consider and properly weigh the expert declarations submitted by Appellant. App. Br. 53-61, 63-69.

The Examiner notes that Appellant's expert declarations were reviewed by the Examiner, finding that those declarations improperly imported limitations disclosed within Appellant's specification into the claims on appeal which were contrary to the broadest reasonable interpretation of those claims, as set forth by the Examiner. Ans. 6.

Further, the Examiner finds that Appellant and their experts improperly narrowed the definition of several terms in a manner that is

inconsistent with the proper interpretation of the claims, in view of Appellant's specification. *Id.* at 7-9.

Consequently, we find the Examiner properly considered all of the objective evidence submitted by Appellant and found such evidence, including expert declarations, not to be persuasive.

ORDER

The Examiner's decision rejecting claims 22-25 is affirmed.

Requests for extensions of time in this *ex parte* reexamination proceeding are governed by 37 C.F.R. § 1.550(c). *See* 37 C.F.R. § 41.50(f).

AFFIRMED

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Patent 6,349,291

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