

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERNATIONAL SECURITIES EXCHANGE, LLC

Petitioner

v.

CHICAGO BOARD OPTIONS EXCHANGE, INC.

Patent Owner

Case IPR2014-00099
Patent 8,266,044 B2

Before JUSTIN T. ARBES, RAMA G. ELLURU, and
JAMES B. ARPIN, *Administrative Patent Judges*.

ELLURU, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

Petitioner International Securities Exchange, LLC, requests *inter partes* review of claims 1-3 of U.S. Patent No. 8,266,044 B2 (Ex. 1001; “the ’044 patent”) (Paper 1, “Pet.”). Patent Owner Chicago Board Options Exchange, Inc., filed a preliminary response opposing institution of review (Paper 9, “Prelim. Resp.”).

We have jurisdiction under 35 U.S.C. § 314. For the reasons that follow, we determine not to institute an *inter partes* review.

I. BACKGROUND

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a):

THRESHOLD—The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

We determine that the information presented in the petition does not show that there is a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim. Accordingly, we deny an *inter partes* review of claims 1-3 of the ’044 patent.

A. *The ’044 Patent (Ex. 1001)*

The ’044 patent, titled “Automated Trading Exchange System Having Integrated Quote Risk Monitoring and Integrated Quote Modification Services,” issued on September 11, 2012, based on U.S. Patent Application No. 13/178,289 (“the ’289 application”), filed on July 7, 2011. The ’289 application is a continuation of U.S. Patent Application No. 12/035,996 (“the ’996 application”) filed on February 22, 2008, which issued as U.S.

Patent No. 7,980,457. The '996 application is a continuation of U.S. Patent Application No. 09/475,534, filed on December 30, 1999, which issued as U.S. Patent No. 7,356,498.

The '044 patent relates to automated trading systems for option contracts (“options”). Ex. 1001, 1:18-22; Abstract. Specifically, the claimed invention is directed to methods for managing the risk of a maker of an options market in an automated trading system. *Id.* at 1:18-22.

Options are traded publicly on exchanges. *Id.* at 1:27-28. Each option covers certain rights to buy or sell an underlying security at a fixed price for a specified period of time. *Id.* at 1:28-31. The potential loss to the buyer of an option is no greater than the initial premium paid for the option, regardless of the performance of the underlying security. *Id.* at 1:37-39. On the contrary, in exchange for the premium, the seller of the option (“the market-maker”) assumes the risk of being assigned the obligation to buy or sell the underlying security, according to the option terms, if the contract is exercised. *Id.* at 1:40-45. Thus, writing options may entail large risks to the market maker. *Id.* at 1:44-45.

Many option trading systems utilize an “open outcry” method. *Id.* at 1:53-54. In such systems, market-makers are required to make a two-sided market by providing an order and offer quote. *Id.* at 1:54-56. In a non-automated, open outcry system, a market-maker communicates verbally with traders indicating their willingness to buy and sell various quantities of securities. *Id.* at 1:56-59. Because a market-maker in such systems has personal control over the types and number of options traded, the market-maker can manage risk associated with his or her options portfolio. *Id.* at 1:59-61. A market-maker manages risk by modifying quotes for options to

favor trades that tend to hedge against unwanted risk. *Id.* at 1:61-65.

The '044 patent Specification states that the automated trading environment already was known in the art. *Id.* at 1:66, 2:1-8. An automated, computer-based trading system typically records quotes and automatically matches them with orders that enter the system. *Id.* at 1:66-2:4. One disadvantage of known automated trading systems was that the systems executed trades so rapidly that a market-maker was unable to withdraw or modify his quotes in a timely manner. *Id.* at 2:4-15.

Software tools that assessed trading option portfolio risk and recommended quote modifications also were known. *Id.* at 2:16-21. An automated trading system, however, processes transactions in the order received. *Id.* at 2:26-28. Thus, even if a market-maker utilized such software tools to modify quotes, those tools may have been unable to act in time, given the speed at which the automated trading exchange system executes orders. *Id.* at 2:21-26. For example, an automated trading exchange may have a message queue containing additional orders that must be processed before the automated exchange receives and processes the market-maker's quote modification request. *Id.* at 2:28-33. These known automated trading exchange systems, therefore, limit a market-maker's ability to manage risk. *Id.* at 2:34-42. The '044 patent Specification recognizes the need for a method that automatically modifies quotes under certain trading conditions in an automated trading exchange system. *Id.* at 2:43-45.

The invention of the '044 patent is directed to apparatus for an automated trading exchange having integrated quote risk monitoring and quote modification services. *Id.* at 2:49-51. Thus, one aspect of the

invention is an apparatus that is implemented using a computer, having memory, a processor, and a communication port. *Id.* at 2:51-54.

The computer receives orders and quotes, wherein a quote has associated trading parameters, such as a risk threshold. *Id.* at 2:54-57. The computer then may generate a trade by matching the received orders and quotes to previously received orders and quotes. *Id.* at 2:64-66. If a trade is not generated, the computer stores each of the received orders and quotes. *Id.* at 2:66-67. The computer determines whether a market-maker's quote has been filled as a result of the generated trade, and, if so, determines a risk level and aggregate risk level associated with the trade. *Id.* at 2:67-3:4. The computer then compares the aggregate risk level with the market-maker's risk threshold for a quote; and, if the threshold is exceeded, the computer automatically modifies at least one of the market-maker's remaining quotes. *Id.* at 3:4-7.

B. Related Matters

Petitioner has been sued for infringement of the '044 patent in a district court case titled *Chicago Bd. Options Exch., LLC v. Int'l Sec. Exch. LLC*, No. 1:13-cv-01339-JMF (S.D.N.Y.). Pet. 5. The '044 patent also is the subject of a Covered Business Method (CBM) patent review in *International Securities Exchange, LLC, v. Chicago Board Options Exchange Inc.*, CBM2013-00051.

Patents related to the '044 patent, U.S. Patent Nos. 7,356,498 B2 and 7,980,457 B2, are the subject of co-pending, covered business method patent review in *International Securities Exchange, LLC, v. Chicago Board Options Exchange Inc.*, CBM2013-00049 and CBM2013-00050,

respectively. Petitioner also filed petitions requesting *inter partes* review of those two patents in IPR2014-00097 and IPR2014-00098, respectively.

C. Illustrative Claim

Of the challenged claims, claim 1 is the only independent claim. Claim 1 of the '044 patent, reproduced below, is representative of the challenged claims:

1. A system for processing trades of securitized instruments based on security orders and quotes received from client computers, comprising:
 - at least one server computer comprising a memory, and a processor, said server computer configured to perform the steps of:
 - receiving orders and quotes, wherein specified ones of said quotes belong to a quote group, and wherein said specified ones of said quotes have associated trading parameters comprising a predefined number of bought or sold contracts relating to said quote group;
 - generating a trade by matching said received orders and quotes to previously received orders and quotes;
 - storing each of said orders and quotes when a trade is not generated;
 - determining whether a quote having associated trading parameters has been filled as a result of the generated trade, and if so, determining a number of contracts that have been bought or sold within said quote group, including the generated trade;
 - comparing said number of contracts that have been bought or sold within said quote group with said predefined number of bought or sold contracts relating to said quote group;
 - and,
 - automatically modifying at least one of the remaining specified ones of said quotes in the quote group if said predefined number of bought or sold contracts is exceeded.

D. The Applied References

Petitioner relies on the following references. Pet. 7. Petitioner also relies upon the Declaration of Dr. Maureen O’Hara. Ex. 1004.

Patent/Publication No.	Date of Issuance or Publication	Exhibit No.
“State of the Art as described in the ’044 patent” (“Admitted Prior Art”)		Ex. 1001
U.S. Patent No. 6,405,180 B2 (“Tilfors”)	June 11, 2002	Ex. 1002
Allen Jan Baird, <i>Option Market Making, Trading and Risk Analysis for the Financial and Commodity Options Markets</i> , (1993) (“Baird”)	1993	Ex. 1003
U.S. Patent No. 6,016,483 (“Rickard”)	January 18, 2000	Ex. 1005

E. The Asserted Grounds

Petitioner challenges claims 1-3 based on the following grounds. Pet. 8.

Prior Art	Basis	Claims Challenged
Tilfors	§ 102(e)	1
Tilfors and Baird	§ 103(a)	2-3
Admitted Prior Art, and Rickard and/or Baird	§ 103(a)	1-3

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the Specification of the

patent in which they appear. 37 C.F.R. § 42.100(b). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning in view of the Specification, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth in the Specification “with reasonable clarity, deliberateness, and precision.” *In re Paulson*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

For purposes of this decision and based on the record before us, we need not provide express constructions at this stage of the proceeding.

B. Anticipation by Tilfors

Petitioner challenges claim 1 as anticipated by Tilfors. Pet. 17-34. Based on the record before us, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to claim 1.

Petitioner has not persuaded us that Tilfors discloses the following elements of claim 1: “[a] server computer configured to . . . determin[e] a number of contracts that have been bought or sold within said quote group, including the generated trade” and “compar[e] said number of contracts that have been bought or sold within said quote group with said predefined number of bought or sold contracts relating to said quote group.” For these elements, Petitioner cites the following Tilfors disclosure (Pet. 22-23, 28-30):

Thus, first when a quote has been traded the one-tick worse rule checks the next one tick worse parameter to see the volume the market maker has specified, step 401. The volume and price specified by the first one tick worse parameter is used

in the matching. If further trade is still indicated in a step 403, i.e. there are matching offers at the worse price, when the volume and price specified by the first one tick worse parameter has been traded, the system returns to the step 401, wherein the second one tick worse parameter is used for generating a new offer specifying another volume, which of course also can be the same volume, at a worse price than the first parameter. The procedure is repeated until in the step 403 there is no match. When there no longer is a match the procedure proceeds to a step 405 wherein the procedure returns from where it came.

Ex. 1002, 6:20-34.

We are not persuaded, however, that Tilfors discloses a server configured to determine the “*number of contracts that have been bought or sold*” (claim 1) (emphasis added). Petitioner does not explain adequately what aspect of the disclosure specifically corresponds to the claimed “determining a number of contracts that have been bought or sold within said quote group.” See Pet. 22-23. According to Dr. O’Hara, “[s]ince Tilfors/Katz checks [if] contract volume of a trade against a tick worse threshold is exceeded,” Tilfors “necessarily” discloses the “determining” element. Ex. 1004 ¶ 49. We are not persuaded that Dr. O’Hara’s assertion is supported by the Tilfors disclosure.

Our determination that Tilfors does not disclose the “determining” element is exemplified by examining the “comparing” element. Claim 1 recites “comparing *said number of contracts that have been bought or sold* within said quote group with said predefined number of bought or sold contracts relating to said quote group.” We determine that the “said” number of contracts that have been bought or sold recited in the “comparing” element refers to the number of contracts “determin[ed]” in the previous element. Petitioner, however, has not pointed to disclosure

showing that the number of instruments that “have been bought or sold” is determined by Tilfors and then compared to the tick worse parameter.

Petitioner contends that Tilfors’s “multiple tick worse threshold parameters” correspond to the claimed “predefined number of bought or sold contracts.” Pet. 22. Petitioner further argues that Tilfors discloses comparing the “actual number of contracts bought or sold” to the “tick worse volume parameter set by the market maker,” and “subsequent quotes are modified (ticked worse) if the predefined number is exceeded.” Pet. 22. Dr. O’Hara likewise states that Tilfors discloses that the “actual number of bought and sold contracts are compared to one or more tick worse thresholds,” and if the threshold is exceeded, the quote is modified (i.e., “ticked worse” to a price less favorable for traders). Ex. 1004 ¶ 50. We are not persuaded that Tilfors discloses the “comparing” element for at least two reasons.

First, Tilfors explains that, when a quote has been traded, the Tilfors system checks the next one tick worse parameter and uses the volume and price specified by that parameter in further matching. Ex. 1002, 6:20-24. The only comparison explained by the cited Tilfors disclosure is that, “[i]f further trade is still indicated . . . , i.e. there are matching offers at the *worse price*, when the volume and price specified by the first one tick worse parameter has been traded” (emphasis added), the system uses the second one tick worse parameter to generate an offer, specifying another volume, which could be the same volume, at a worse price than the first parameter. *Id.* at 6:24-31. That disclosure only indicates that Tilfors compares the *price* of an outstanding offer to the predefined *price* set by the one tick worse parameter. Moreover, even assuming both the volume and price indicated

by the one tick worse parameter are used, the comparison is *prospective* in nature. In other words, the volume and price indicated by the one tick worse parameter is compared to outstanding customer offers, not to the claimed “number of contracts that *have been bought or sold* within said quote group” (emphasis added). *See* Ex. 1002, 2:45-49 (“If the market maker full volume at the best price is traded, and the customer order indicates that it wants to trade more (volume and price indicates further matching) the tick worse parameter generates new quotes”); Prelim. Resp. 24 (“The only values that are evaluated in connection with the tick worse parameters are the volume and price of a *customer* order. . . . Tilfors is *silent* regarding comparing tick worse thresholds to a number of contracts that has been traded” (internal citation omitted)).

Second, Petitioner also has not persuaded us that Tilfors discloses “determining a number of contracts that have been bought or sold *within said quote group*” and “comparing” that to a “predefined number of bought or sold contracts *relating to said quote group*” (claim 1) (emphasis added). Petitioner provides no explanation as to how Tilfors satisfies the claim elements “within” and “relating to” “said quote group.” *See* Prelim. Resp. 22-23. As Patent Owner notes, Petitioner does not explain how Tilfors discloses determining a number of contracts that have been bought or sold “within a collection of related quotes” or how any tick worse parameter equates with the recited predefined number of bought or sold contracts “relating to a collection of related quotes.” *Id.* at 24-25.

Accordingly, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in this challenge with respect to claim 1.

C. Obviousness of Claims 2 and 3 over Tilfors and Baird

Petitioner challenges claims 2 and 3 as obvious by Tilfors and Baird. Pet. 34-41. Based on the record before us, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail in its challenge with respect to claims 2 and 3.

Petitioner refers to Baird as allegedly teaching the additional limitations of dependent claims 2 and 3. *See* Pet. 34-35. However, Petitioner does not argue that Baird cures the deficiencies of Tilfors, discussed above with respect to independent claim 1. *See* Prelim. Resp. 32. Therefore, for those reasons discussed above, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail with respect to claims 2 and 3.

D. Obviousness of Claims 1-3 in view of Applicant's Admitted Prior Art in view of Rickard, and/or Baird

Petitioner challenges claims 1-3 as obvious over Applicant's admitted prior art and Rickard, and/or Baird. Pet. 41-47. Petitioner has not persuaded us, however, that there is a reasonable likelihood that it would prevail with respect to claims 1-3 on this ground.

Instead, we are persuaded by Patent Owner (*see* Prelim. Resp. 32) that, although Petitioner alleges that claims 1-3 would have been obvious over the asserted prior art (*see* Pet. 41-47), Petitioner has not provided an element-by-element analysis for each of claims 1-3 with respect to the asserted prior art, for example, with a properly explained claim chart. Petitioner does not "explain clearly and succinctly what the petitioner believes a claim means in comparison to something else, such as another claim, a reference, or a specification." *See* Office Patent Trial Practice

Guide, 77 Fed. Reg. 48,756, 48,764 (Aug. 14, 2012). Furthermore, Petitioner does not map the construed claim language to the teachings of the asserted prior art references, does not explain how the proposed combinations teach or suggest all of the limitations of the claims, and does not explain how the claims would have been obvious over that combination. *See* 37 C.F.R. § 42.104(b)(4) (a petition must explain “[h]ow the construed claim is unpatentable under the statutory grounds identified,” which includes “specify[ing] where each element of the claim is found in the prior art patents or printed publications relied upon”). For the foregoing reasons, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to claims 1-3 over the combination of Applicant’s admitted prior art and Rickard, and/or Baird.

III. CONCLUSION

We conclude that Petitioner has not demonstrated a reasonable likelihood that at least one challenged claim is unpatentable based on the asserted grounds. We, therefore, do not institute an *inter partes* review on any of the asserted grounds as to any of the challenged claims.

IV. ORDER

It is ORDERED that the petition is *denied* as to all challenged claims of the ’044 patent.

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