United States Court of Appeals for the Federal Circuit

CHICAGO BOARD OPTIONS EXCHANGE, INC.,
Plaintiff-Cross Appellant,

v.

INTERNATIONAL SECURITIES EXCHANGE, LLC,
Defendant-Appellant.

2011-1267, -1298

Appeal from the United States District Court for the Northern District of Illinois in Consolidated Case Nos. 07-CV-0623 and 07-CV-4709, Judge Joan H. Lefkow.

Decided: May 7, 2012

DAVID FRANCESCANI, Fish & Richardson P.C., of New York, New York, argued for plaintiff-cross appellant. With him on the brief were JONATHAN A. MARSHALL, MICHAEL T. ZOPPO, BRIAN J. DOYLE and LINZY MCCARTNEY.

PARKER H. BAGLEY, Goodwin Procter, LLP, of New York, New York, argued for defendant-appellant. Of counsel on the brief were STEVEN R. GUSTAVSON, MICHAEL S. DE VINCENZO, CALVIN E. WINGFIELD, JR. and CHARLES WIZENFELD. Of counsel was BENJAMIN A. KELLER.

* Honorable Jeremy Fogel, District Judge for the United States District Court for the Northern District of California, sitting by designation.

Before RADER, *Chief Judge*, WALLACH, *Circuit Judge*, and FOGEL, *District Judge*.*

WALLACH, *Circuit Judge*.

International Securities Exchange, LLC ("ISE") appeals from a final judgment entered by the United States District Court for the Northern District of Illinois, holding that the trading system of Chicago Board Options Exchange, Inc. ("CBOE") does not infringe ISE's United States Patent No. 6,618,707 ("the '707 Patent"). CBOE cross-appeals the district court's denial of its motions for leave to amend its Complaint. Because the district court erred in construing "system memory means," "matching," and "automated exchange," and did not abuse its discretion in denying CBOE's motions for leave to amend its Complaint, we AFFIRM-IN-PART, REVERSE-IN-PART, VACATE-IN-PART, and REMAND.
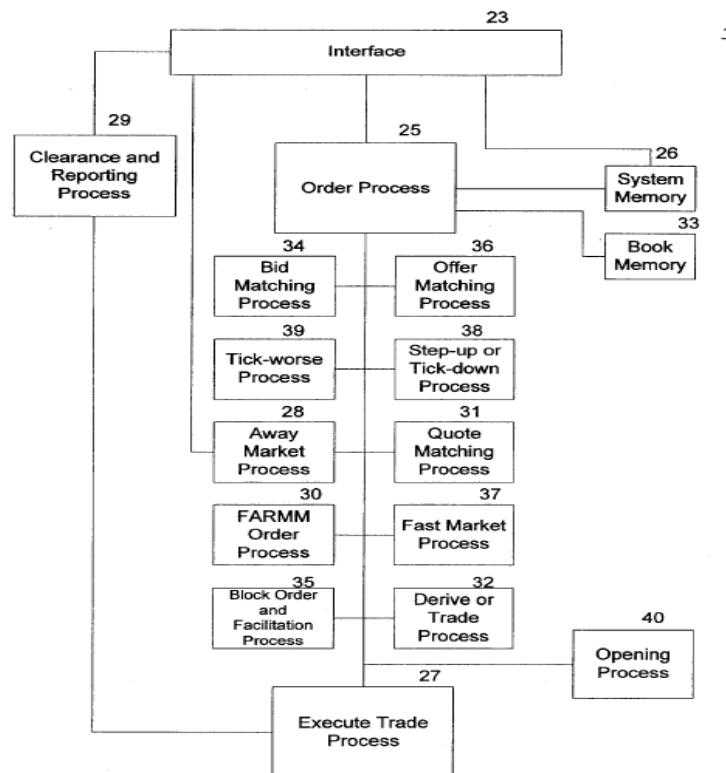
BACKGROUND

The '707 Patent, titled "Automated Exchange for Trading Derivative Securities," discloses an invention that relates generally to markets for the exchange of securities. '707 Patent, col.1 ll.13-14. In particular, the '707 Patent is directed to an automated exchange for the trading of options contracts that allocates trades among market professionals and that assures liquidity. *Id.* col.1 ll.14-17. The Patent distinguishes an "automated" exchange from the traditional, floor-based "open-outcry" system for trading options contracts. *Id.* col.1 ll.24-26.

In an open-outcry system, trading takes place through oral communications between market professionals at a central location in open view of other market professionals. *Id.* col.1 ll.27-29. For example, an order is typically

relayed out to a trader standing in a "pit." *Id.* col.1 ll.29-
30. The trader shouts out that he has received an order
and waits until another trader or traders shouts back a
two-sided market (the prices at which they are willing to
buy and sell a particular option contract), then a trade
results. *Id.* col.1 ll.30-34.

The '707 Patent builds on this traditional exchange
system. Specifically, the Patent purports that "[i]t is an
advantage of the invention to provide an automated
system for matching previously entered orders and quota-
tions with incoming orders and quotations on an exchange
for securities, which will improve liquidity and assure the
fair handling of orders." *Id.* col.4 ll.55-59. Figure 2 of the
'707 Patent illustrates the exchange in detail:

FIG. 2

The data interface 23 performs error checking, data compression, encryption, and mediates the exchange of data between the exchange and public customers, professionals, and other entities. *Id.* col.8 ll.56-60; Fig. 2. Order and quotation information received via the interface 23 is sent to the order process 25. '707 Patent, col.8 ll.64-66. The order process 25 first checks to see if the order or quotation is valid according to programmable parameters that reflect the particular trading rules of the entity administering the invention. *Id.* col.8 l.66-col.9 l.2. Order process 25 also checks, among other things, whether a fast market condition (*i.e.*, high market volatility) exists, whether the order is a public customer or professional

order, and what prices are in the away markets. *See generally id.* col.9. Under certain conditions, upon determining that a better price does not exist in an away market, order process 25 sends orders to the bid matching process 34 (offers to buy) and to the offer matching process 36 (offers to sell). *Id.* col.9 ll.58-64. Accordingly, representative claim 1 recites, in part:

> 1. An automated exchange for trading a financial instrument wherein the trade may be one of a purchase of a quantity of the instrument and a sale of a quantity of the instrument, the exchange comprising:
>
>> an interface . . .
>>
>> book memory means . . .
>>
>> system memory means for storing allocating parameters for allocating trades between the incoming order or quotation and the previously received orders and quotations; and
>>
>> processor means . . . .

Id. col.29 l.53-col.30 l.15.

CBOE operates the Chicago Board Options Exchange using the Hybrid Trading System (the "Hybrid"), which allegedly infringes the '707 Patent. The Hybrid integrates a version of CBOEdirect, a fully screen-based trading system, with open-outcry trading. CBOE has described the Hybrid as an integrated single market system that blends the elements of open-outcry and electronic execution.

ISE instituted the underlying lawsuit against CBOE for patent infringement in the United States District Court for the Southern District of New York. Subse-

quently, CBOE sued ISE at the United States District Court for the Northern District of Illinois seeking, among other relief, a declaratory judgment that the '707 Patent is invalid, is not infringed by CBOE, and is unenforceable against CBOE because of inequitable conduct by ISE before the United States Patent and Trademark Office. The New York action eventually was transferred to the Northern District of Illinois where the cases were consolidated.

On January 25, 2010, the district court issued its final claim construction order. On April 15, 2010, CBOE moved for summary judgment of noninfringement based on the district court's construction of the terms "system memory means," "matching," and "automated exchange." On March 2, 2011, the district court denied CBOE's motion to the extent that motion was based upon the "automated exchange" limitation, but granted the motion with respect to "system memory means" and "matching." ISE appeals the district court's claim construction of the three limitations and the resulting summary judgment decision. Prior to CBOE's motion for summary judgment, the district court twice denied CBOE's motion for leave to amend its Complaint, denials that CBOE now cross-appeals. We have jurisdiction over both appeals pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

ISE raises three issues on appeal: (1) whether the district court erred in construing "system memory means" and further erred in granting summary judgment of noninfringement with respect to claims 1-6, 9-10, and 22-33 of the '707 Patent based on its construction of "system memory means"; (2) whether the district court erred in construing "matching" and further erred in granting summary judgment of noninfringement with respect to

claims 35, 36, 43, 45, and 56-58 of the '707 Patent based on its construction of "matching"; and (3) whether the district court erred in construing "automated exchange." By its cross-appeal, CBOE raises the issue of whether the district court abused its discretion in denying CBOE leave to amend the inequitable conduct allegations in its Complaint.

I.

We review a district court's claim construction *de novo. Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454-55 (Fed. Cir. 1998) (en banc). Likewise, "[a] district court's identification of the function and corresponding structure of a means-plus-function limitation is . . . reviewed *de novo.*" *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1329 (Fed. Cir. 2005) (citation omitted). To ascertain the scope and meaning of the asserted claims, we look to the words of the claims themselves, the specification, the prosecution history, and, if necessary, any relevant extrinsic evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315-17 (Fed. Cir. 2005) (en banc).

A.

The district court erred in holding that the corresponding structure for "system memory means" included a system memory, a bid matching process, and an offer matching process. Claim 1, representative of the asserted apparatus claims, recites, in pertinent part: "An automated exchange for trading a financial instrument . . . , the exchange comprising: . . . *system memory means* for storing allocating parameters for allocating trades between the incoming order or quotation and the previously received orders and quotations . . . ." '707 Patent, col.29 ll.53-56, col.30 ll.1-4 (emphasis added). The district court construed "system memory means" to be a means-plus-function limitation and construed its function to be "stor-

ing parameters of the entity administering the invention for allocating trades between the incoming order or quotation and the previously received orders and quotations." Joint Appendix ("J.A. __") 34. The district court also held that the corresponding structure includes three separate components: a system memory; a bid matching process; and an offer matching process. *Id.*

The parties' dispute lies in the district court's construction of the limitation's corresponding structure. Specifically, ISE argues that the district court erred in holding that the bid matching process and the offer matching process are necessarily included as structure of "system memory means" along with a system memory. ISE also avers that sufficient structure is disclosed in the claim language itself to overcome the presumption of a means-plus-function limitation. CBOE contends that the district court did not err in including the bid matching process and the offer matching process as part of the structure of a "system memory means" because the storing of allocating parameters for professional orders occurs in the system memory and the storing of allocating parameters for public customer orders occurs in the bid matching and offer matching processes.

As an initial matter, ISE's contention that the recitation of "system memory" is sufficient structure to overcome the presumption of a means-plus-function limitation was not before the district court. The parties expressly agreed during claim construction that "system memory means" is a means-plus-function limitation. J.A. 11. ISE may not take a different position on appeal. *See Lazare Kaplan Int'l, Inc. v. Photoscribe Techs., Inc.*, 628 F.3d 1359, 1376 (Fed. Cir. 2010) ("As we have repeatedly explained, litigants waive their right to present new claim construction disputes if they are raised for the first time

after trial.") (citation and quotation omitted).[1] We therefore turn to the district court's interpretation of the corresponding structure for "system memory means," which we treat as a mean-plus-function limitation.

Means-plus-function limitations are governed by 35 U.S.C. § 112, ¶ 6, which provides:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure . . . in support thereof, and such claim shall be construed to cover the corresponding structure . . . described in the specification and equivalents thereof.

As such, § 112, ¶ 6 "represents a *quid pro quo* by permitting inventors to use a generic means expression for a claim limitation provided that the specification indicates what structure(s) constitute(s) the means." *Atmel Corp. v.*

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[1] Even if this argument was not waived, the presumption that "system memory means" is a means-plus-function limitation is not overcome. Specifically, the claim language fails to sufficiently recite the corresponding structure of "system memory means." In particular, the limitation articulates a function, but nowhere in the language of the limitation is there a specific and definite structure of a "system memory means." As a result, this limitation as drafted does not aid a skilled artisan in ascertaining its corresponding structure because no such structure is sufficiently recited. *See Serrano v. Telular Corp.*, 111 F.3d 1578, 1582 (Fed. Cir. 1997) ("The 'determination means' limitation . . . recites a means for determining the last digit without reciting definite structure in support of that function, and that limitation therefore is a 'means plus function' limitation . . . ."). Accordingly, "system memory means . . ." is a means-plus-function limitation.

Info. Storage Devices, Inc., 198 F.3d 1374, 1381 (Fed. Cir. 1999).

Construction of a means-plus-function limitation involves two steps. First, the court must identify the claimed function. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006). Second, the court must identify the corresponding structure in the specification that performs the recited function. *Id.* The parties' dispute in this case concerns only the second step.

It is well-established that the "specification must be read as a whole to determine the structure capable of performing the claimed function." *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1379 (Fed. Cir. 2001). A "structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003) (citation omitted). "The duty of a patentee to clearly link or associate structure with the claimed function is the quid pro quo for allowing the patentee to express the claim in terms of function under section 112, paragraph 6." *Id.* at 1211 (citations omitted). Thus, "[i]f an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention . . . ." *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 948 (Fed. Cir. 2007) (citation omitted). Whether the specification "adequately sets forth structure corresponding to the claimed function necessitates consideration of that disclosure from the viewpoint of one skilled in the art." *Budde*, 250 F.3d at 1376.

In this case, system memory is the disclosed structure clearly associated with "system memory means." CBOE

attempts to draw a fine line with a broad brush by contending that the system memory alone does not store allocating parameters for both public customer and professional orders as the claims require. Based on this premise, CBOE argues that the bid and offer matching processes must be included as structure of a "system memory means" because the bid and offer matching processes store allocating parameters pertaining to public customer orders while the system memory stores allocating parameters related to professional orders. The specification, however, tells a different tale as system memory indeed is linked with storing allocating parameters for both types of orders.

For example, certain parameters for determining whether an incoming public customer order is automatically traded are, in fact, stored in the system memory:

> The derive or trade process 32 will either . . . automatically match an incoming *public customer order* that improves the market for fewer than 10 contract at the order's stated price, or else derive an order for the [Professional] at the stated price at the order so that the size of the best price will be 10 contracts. *Whether an order is automatically traded or whether an order is derived is determined by a parameter stored in the system memory 26.*

'707 Patent, col.22 ll.32-39 (emphases added). Likewise, the Patent describes a set of predetermined parameters stored in the system memory that pertain to public customer orders that are either traded or stored based on away market prices:

> The away market process 28 either trades the *public customer order* automatically against the [Professional] at the same price as the better price

in the away market 17 or else stores the *order* in the book memory 33 and alerts the [Professional] to the *order* according to a set of predetermined *parameters stored in the system memory 26* by the [Professional].

Id. col.9 ll.46-51 (emphases added).[2]   In yet another example, fast market parameters are stored in the system memory that introduce time delays and determine optimal price for executions based upon orders and quotes that accumulate during the delay. *Id.* col.9 ll.14-22. Because optimal price is determined based on orders and quotes that accumulate during the delay, the parameters stored in the system memory necessarily pertain to all orders, including public and professional orders.[3]

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[2]   Professional" refers to Primary Market Makers ("PMMs"), Competitive Market Makers ("CMMs"), or Electronic Market Makers ("EAMs") as articulated in the Patent. *See* '707 Patent, col.6 l.62-col.7 l.11.

[3]   The prosecution history of the '707 Patent further confirms that the patentee contemplated and desired to clarify that the system memory, in fact, stored allocating parameters for both professional and public customer orders:

> Claims 1 and 35, as filed, recite the identification of *customer and professional orders* and the use of a stored parameter to allocate portions of an *incoming order* among *previously received orders.* Thus, as discussed below, claims 1 and 35, as well as the claims which depend from them, prior to the present amendment, are submitted as patentable over the prior art. Nonetheless, to more clearly show that *parameters stored in the system memory are used to allocate portions of an incoming order or quotation*, amended claims 1 and 35 recite this as an "allocating" parameter.

Despite this language in the specification, CBOE contends that the bid matching process and the offer matching process "store" allocation parameters because they "apply" and "contain" allocation parameters. In effect, CBOE argues that "store," "apply," and "contain" have similar meanings. *See Bid for Position, LLC v. AOL, LLC*, 601 F.3d 1311, 1317-18 (Fed. Cir. 2010) (holding "bid" and "value of the bid" to have the same meaning because the claim language and specification used the terms interchangeably). We disagree.

The term "store" or a derivation thereof is associated with "system memory" or "book memory" or a "memory" every time the term is used in the specification. Nowhere is "system memory" or "book memory" associated with "apply" or "contain." Nothing in the Patent suggests that "storing" and "applying" are used interchangeably in reference to allocating parameters. Hence, CBOE's contention that the bid matching process and the offer matching process "store" allocating parameters fails because the Patent does not ascribe the same meaning for "apply," "contain," and "store." The general presumption that different terms have different meanings remains. *See CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings."). Accordingly, we construe the function of "system memory means" to be "storing parameters of the entity administering the invention for allocating trades between the incoming order or quotation and the previously received orders and quotations." The clearly linked

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Response to Office Action dated November 2, 1999 at 29 (emphases added), J.A. 2130.

structure associated with this function is "system memory."

<div align="center">B.</div>

The district court concluded that "matching" and "allocating" are distinct processes, and we agree. However, the district court erred by concluding that "matching" may be based on price only. Claims 35 and 56 are representative of the asserted method claims. Claim 35 recites:

> 35. A process for trading a financial instrument on an automated exchange wherein the trade may be one of a purchase of a quantity of the instrument and a sale of a quantity of the instrument, the process comprising:
>
> . . .
>
>> first *matching* a first portion of the incoming order or quotation against the public customer order stored in the book memory based on the allocating parameter; and
>>
>> second *matching* a remaining portion of the incoming order or quotation preferentially against professional orders and quotations with larger size based on the allocating parameter.

'707 Patent, col.35 ll.23-26, 40-47 (emphases added). In addition, claim 56 states, in part: "*matching* the incoming order or quotation against the orders and quotations stored in the book memory based on the *allocating* parameter . . . ." *Id.* col.39 ll.18-20 (emphases added).

The district court construed "matching" to mean "identifying a counterpart order or quotation for an incoming order or quotation based on price." J.A. 32. It also construed "allocating" to mean "dividing all or portions of

the incoming order or quotation among the previously received orders and quotations." J.A. 31. It construed "allocating parameters" as "rules for dividing portions of the incoming order or quotation among the previously received orders and quotations," and determined that allocating and matching are distinct processes. J.A. 29, 32.

ISE contends that the district court's construction limiting "matching" as based on price alone is not supported by the specification, and otherwise, renders other claims internally inconsistent. It also claims that "allocating" and "matching" are not distinct processes, and instead, that "allocating" is part of the "matching" process.

The plain language of the '707 Patent shows that "matching" cannot be based on price only. Claim 35 recites: "matching a remaining portion of the incoming order or quotation . . . against professional orders and quotations with larger size based on the allocating parameter." '707 Patent, col.35 ll.44-47. Claim 2 also provides that matching is based on a pro rata basis. *Id.* col.30 l.18. Additionally, claim 4 recites matching based on an allocation formula. *Id.* col.30 l.55. Thus, the claim language supports ISE's argument that "matching" cannot be based on price only.

The specification offers further support for ISE's contention. It provides that "when all stored public customer orders at the best price have been matched, then professional orders and quotations are *matched on a pro rata basis.*" '707 Patent, col.6 ll.1-3 (emphasis added). "Time priority" is another basis on which "matching" can occur: "In this case, [Professional] #1 and [Professional] #2 have the same size, which is greater than [Professional] #3. Because [Professional] #1 has *time priority* over [Profes-

sional] #2, [Professional] #1 gets *matched* first." *Id.* col.18 ll.63-66 (emphases added).[4] Thus, while price is one basis that may apply to all matches, it is not the only basis of "matching."

The parties also dispute whether and to what extent "matching" and "allocating" are distinct or of the same process. While ISE appears to concede that "matching" and "allocating" are different, it maintains that they are part of a single process.[5] CBOE disagrees contending that "allocating" is a process that is distinct from "matching." We conclude that "matching" and "allocating" are, indeed, distinct processes.

The claim language supports this distinction. Claim 1 recites, in relevant part, a processor means:

> for *allocating* portions of the incoming order or quotation . . . , wherein the *allocating* parameters include parameters for *allocating* a first portion of the incoming order or quotation . . . and *allocating*

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[4]   As discussed above in reference to claim 35, orders and quotations may further be matched based on size: "[Professional] #2 now has the *largest size* and *66% of the size* at the highest bid (20/30) and is *matched* for 14 contracts, leaving 7 contracts. [Professional] #3, the last remaining professional, trades the balance of 7 contracts." '707 Patent, col.19 ll.1-4 (emphases added).

[5]   CBOE contends that ISE is precluded from arguing that "allocating" and "matching" are not different and that matching is not based on price because it agreed otherwise during the *Markman* hearing. A review of the hearing transcripts does not support CBOE's contention. ISE did not represent that "allocating" and "matching" were distinct. On the contrary, ISE expressly stated on the record that the two terms were different yet part of the same process. J.A. 9011-13.

a remaining portion of the incoming order or quotation . . . .

'707 Patent, col.30 ll.5-13 (emphases added). Dependent claim 2 provides a further limitation to claim 1: "[t]he exchange according to claim 1, wherein processor means further comprises means for *matching* the remaining portion . . . ." *Id.* col.30 ll.15-18 (emphasis added). These claims indicate that "matching" and "allocating" are distinct because "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim."[6] *Phillips*, 415 F.3d at 1315. This presumption is not rebutted by the specification. In describing the Trading Process, the specification provides:

As a first example . . . [a]t step S170, the bid matching process determines that all 4 contracts in the incoming order have [to] be *matched*. The *match* between the incoming order and the customer order in the book memory 33 is sent to the execute trade process 27 in step S172.

As a second example . . . . [a]s shown in FIG. 4(a), the bid matching process 34 completes step S168 as above, *matching* 10 contracts of the incoming

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[6]   Other claims recite similar limitations that distinguish between "allocating" and "matching." Specifically, claim 35 provides "second *matching* a remaining portion of the incoming order or quotation preferentially against professional orders and quotations with larger size based on the allocating parameter." '707 Patent, col.35 ll.44-47 (emphasis added). Depending on claim 35, claim 36 recites: "The process according to claim 35, wherein the step of second matching further comprises *allocating* the remaining portion among the plurality of professional orders and quotations on a pro rata basis." '707 Patent, col.35 ll.48-51 (emphasis added).

order with the public customer order to sell 10 contract[s] at 3 1/2. At step S170, however, the bid matching process 34 determines that there are still 20 contracts . . . . The bid matching process then applies the allocation algorithm as illustrated in FIG. 4(b).

FIG. 4(b) shows an allocation formula for *matching* incoming orders against quotations and professional orders at the best price . . . . [T]he balance of the incoming order of 20 contracts is *allocated* among [different Professionals] according to the following formula . . .

'707 Patent, col.16 ll.1-34 (emphases added). As the first example indicates, all incoming orders initially are "matched" to public customer orders, and where no incoming orders remain to be filled, the order is executed. In the second example, the incoming order is initially "matched" to the available public customer orders. Where there are remaining incoming orders, the balance of the incoming order is then "allocated" among quotations and professional orders. In addition, the '707 Patent's abstract describes an "exchange [that] *allocates* the *matching* of orders first to fill customer orders and then to fill professional orders on a pro rata basis." These examples show that "matching" occurs at some point that is distinct from "allocating."

Based on the claims and the specification, we conclude that "allocating" and "matching" are distinct processes. We often assume different terms convey different meanings. *SEB S.A. v. Montgomery Ward & Co., Inc.*, 594 F.3d 1360, 1369 (Fed. Cir. 2010) (citation omitted). The '707 Patent does not teach otherwise in this instance. Accordingly, we construe "matching" as "identifying a counterpart order or quotation for an incoming order or

quotation." We hold that "matching" is a process that is distinct from "allocating."

C.

Although the district court did not err in holding that the '707 Patent disavowed all floor-based exchange systems, it did err in determining that "automated exchange" describes a "method." The district court construed "automated exchange" to mean "a method for executing trades of financial instruments that is fully computerized, such that it does not include matching or allocating through use of open outcry." J.A. 27. It also construed "exchange" as "a method for executing trades of financial instruments," and construed "automated" to mean "fully computerized, such that its protocol does not include matching or allocating through use of open-outcry in order to execute trades." *Id.* The district court further explained that "a method that effects trades of financial instruments by automatically matching and allocating but also entails 'oral communications between market professionals at a central location in open view of other market professionals' is not fully computerized and therefore not 'automated.'" *Id.* This construction was based largely on the district court's holding that the '707 Patent disavowed traditional floor-based trading. J.A. 7, 27.

We have recognized that "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1319 (Fed. Cir. 2006) (quoting *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001)). Here, we agree with the district

court and find that the '707 Patent disavows traditional floor-based trading.

The Patent describes a system of trading options contracts in these floor-based environments as an "open-outcry" system because trading takes place through oral communications between market professionals at a central location in open view of other market professionals. '707 Patent, col.1 ll.24-28. The Patent characterizes the open-outcry system as "antiquated," but it explains that because of efforts to preserve the traditional system, the transition to and use of computer-based technology on options exchanges has been slow. *Id.* col.1 ll.34-37. While floor-based exchanges employ some level of automation in the execution and allocation of orders, the specification recites that such exchanges have "inherent inadequacies" and "deficiencies [that] make it difficult to assess market depth and liquidity [which] ultimately impact the quality of the prices customers receive for their order." *Id.* col.2 ll.19-24, 59-67. The Patent further discloses that the disjointed nature of the various manual, and occasionally automated, systems used in floor-based exchanges cultivate these deficiencies, and again, make it difficult to assess the true market depth and liquidity ultimately impacting the quality of prices. *Id.* col.4 ll.47-51. The Patent suggests that the increasing volume of trades in options contracts, as well as the speed at which price information of underlying stocks is transmitted to consumers, have increased the demand for faster execution of trades. *Id.* col.4 ll.34-37. The Patent proposes an automated exchange for the express purpose of remedying these perceived deficiencies.

The '707 Patent thus disavows the traditional open-outcry or floor-based trading systems. There is no other way to interpret the listing in the specification of the many reasons why manual and partially automated

exchanges cannot sustain the growing demands of the market. Indeed, the specification goes well beyond expressing the patentee's preference for a fully automated exchange over a manual or a partially automated one, and its repeated derogatory statements about the latter reasonably may be viewed as a disavowal of that subject matter from the scope of the Patent's claims. *Honeywell Int'l, Inc.*, 452 F.3d at 1319.

ISE nonetheless argues that the '707 Patent does not disavow all aspects of the traditional floor-based system because it does not require a trading system to execute *all* trades automatically. This argument misconstrues the district court's construction of "automated exchange." The district court's construction requires that such an exchange be "fully computerized, such that it does not include matching or allocating through use of open outcry." J.A. 7.

In addition, ISE contends that the district court erred in construing "automated exchange" as a method rather than a system for trading. CBOE argues that the district court settled on the concept of a "method" in order to differentiate the claims of the Patent from the way options contracts are traded in the traditional floor-based environments. At least in this respect, ISE's position has merit.

Once again, the claims are instructive. The '707 Patent has seventeen independent claims. Eight of these are system claims and nine are method claims. The system claims are directed to "[a]n automated exchange for trading a financial instrument," *e.g.*, '707 Patent, col.29 ll.53-54, whereas the method claims recite "a process for trading a financial instrument on an automated exchange," *e.g.*, *id.* col.35 l.23. Hence, "automated exchange" cannot be construed as a method when the

recited method or "process for trading a financial instrument" is conducted on the "automated exchange." The specification also explains that: "[o]ver time, each of the existing options exchanges has developed systems to track the best quotation . . . ," *id.* col.2 ll.2-3; that "[i]t is an advantage of the invention to provide an automated system for matching previously entered orders and quotations . . . ," *id.* col.4 ll.54-56; and that "[i]t is to be understood that the *exchange* according to the invention simultaneously provides a market for a series of options . . . . The vast number of options that can be traded makes the invention particularly advantageous over less *automated systems . . .* ," *id.* col.6 ll.49-55 (emphases added).

In this instance, proper claim construction may not vary from the Patent's own description of "automated exchange" as being a system. Accordingly, while we affirm the district court's determination that the "automated exchange" disavowed the open-outcry system, we cannot adopt the district court's construction of "automated exchange" as a "method." Instead, we construe "automated exchange" to mean "a system for executing trades of financial instruments that is fully computerized, such that it does not include matching or allocating through the use of open-outcry."

II.

The district court did not abuse its discretion in denying CBOE's motions for leave to amend its Complaint. On October 25, 2007, the district court entered a scheduling order that required the parties to move to amend their respective pleadings by January 11, 2008. J.A. 1772. CBOE deposed pertinent witnesses on April 6, 2009, May 22, 2009, and June 22-23, 2009 at which time CBOE alleges that it discovered new facts concerning its inequitable conduct defense. J.A. 21. On September 16, 2009,

CBOE moved for a prior and separate bench trial on the inequitable conduct allegations which the district court granted. J.A. 64, Dkt. Nos. 182, 204. On November 4, 2009, CBOE moved for leave to file an amended Complaint ("proposed November Second Amended Complaint"). J.A. 66, Dkt. No. 209. On November 18, 2009, ISE moved for summary judgment on the proposed amended allegations of inequitable conduct. J.A. 3029. On December 22, 2009, the district court denied CBOE's motion for leave to file the proposed November Second Amended Complaint ("December 22, 2009 Order"), finding that CBOE had not demonstrated the requisite "good cause" to amend after the deadline set in the scheduling order. J.A. 20-22. The district court also concluded that CBOE had not pled the inequitable conduct allegations with particularity pursuant to Federal Rule of Civil Procedure 9 ("Rule 9"). J.A. 23-26. Based on CBOE's failure to plead sufficiently, the district court determined that ISE's motion for summary judgment on CBOE's inequitable conduct defense was moot. J.A. 26.

On December 31, 2009, CBOE again sought leave to amend its Complaint ("proposed December Second Amended Complaint"). J.A. 5099. While finding this pleading satisfied Rule 9, the district court nevertheless denied the motion holding that CBOE had failed to show good cause for its delay in seeking leave to amend ("January 27, 2010 Order"). J.A. 5100. CBOE contends that the district court abused its discretion.

A decision to deny a motion for leave to amend a pleading raises an issue not unique to patent law, and thus, we apply the law of the regional circuit in which the district court sits. *Juicy Whip, Inc. v. Orange Bang, Inc.*, 382 F.3d 1367, 1370 (Fed. Cir. 2004). Here, we apply the law of the Seventh Circuit and review a district court's denial of leave to amend a complaint for abuse of discre-

tion and "reverse only if no reasonable person could agree with that decision." *Carroll v. Stryker Corp.*, 658 F.3d 675, 684 (7th Cir. 2011) (citation omitted).

Applying this standard, we find no error in the district court's rulings of December 22, 2009 and January 27, 2010. In the December 22, 2009 Order, the district court found that CBOE failed to show good cause by "not provid[ing] any explanation for why it waited until November 4, 2009 to seek leave to file an amended complaint." J.A. 21. The district court found fault in CBOE's delay in seeking leave "particularly since it announced its theory in its detailed memorandum in support of its motion for a prior and separate nonjury trial which included the proposed allegations" on September 16, 2009. *Id.* The district court also found that "CBOE cannot claim to be surprised that it has to amend its complaint to assert these new bases for inequitable conduct [because] CBOE is a sophisticated litigant and was notified by ISE as early as August 6, 2009 that ISE expected any new allegations would have to be made part of CBOE's complaint before CBOE could proceed further on them." *Id.* Because "CBOE . . . waited until after fact discovery had closed (on June 23, 2009), the *Markman* hearing took place, expert reports were exchanged, and two weeks before dispositive motions were due to move to amend[,]" without any explanation, the district court held that CBOE's delay did not reflect diligence. J.A. 21-22.

The district court repeated this reasoning in denying CBOE's subsequent attempt to amend its Complaint. J.A. 5100. In the January 27, 2010 Order, the district court noted that ISE had objected to the timeliness of the proposed new allegations in August 2009 and again at the time the parties were scheduling their meet and confer conference on October 14, 2009. *Id.* The district court also rejected CBOE's claim that, "between September 16 and

November 4, it was seeking ISE's consent to the amendment [to include the new allegations] and, once it became clear ISE would not consent, filed its motion four business days later" as a basis for diligence. *Id.* The district court found that "CBOE's focus on other aspects of the litigation in September and October does not serve as good cause in this case, as its decision to set aside its inequitable conduct claims was a tactical one." *Id.* We cannot say that these determinations, either individually or collectively, amount to an abuse of discretion.

CBOE also contends that the Complaint was constructively amended when ISE consented to prior and separate trial on the allegations in the proposed November Second Amended Complaint. However, the district court expressly rejected CBOE's efforts to amend its pleading to include the proposed allegations because it found that the allegations of the proposed November Second Amended Complaint did not comport with Rule 9. J.A. 23. As a result, the district court never considered the merits of ISE's motion for summary judgment on the proposed allegations that were the subject of the purported "constructive amendment." *See Walton v. Jennings Cmty. Hosp.*, 875 F.2d 1317, 1320 (7th Cir. 1989) (finding constructive amendment where plaintiff originally pleaded contract-based theory but at briefing on summary judgment both parties included a tort based theory to which the court viewed as viable and to which the court ruled on the merits). Finally, the district court found that the "more particularized allegations in CBOE's [proposed December Second Amended Complaint, while sufficient,] would require another round of summary judgment briefs, which would prejudice ISE." J.A. 5100. These determinations are supported by the record and do not amount to an abuse of discretion.

CONCLUSION

We vacate the district court's judgment of noninfringement and remand for further proceedings based on this court's interpretation of the "system memory means," "matching," and "automated exchange." We also affirm the district court's denial of CBOE's motions for leave to amend the Complaint.

AFFIRMED-IN-PART, REVERSED-IN-PART, VACATED-IN-PART, and REMANDED.

Each party shall bear its own costs.