

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERACTIVE BROKERS LLC; CQG, INC.;
CQG, LLC (f/k/a CQGT, LLC);
NINJATRADER GROUP, LLC; NINJATRADER, LLC;
TRADESTATION GROUP, INC.; TRADESTATION SECURITIES, INC.;
and TRADESTATION TECHNOLOGIES, INC.,
Petitioner,

v.

CHART TRADING DEVELOPMENT, LLC,
Patent Owner.

Case CBM2016-00039
Patent 8,380,611 B2

Before BRIAN J. McNAMARA, FRANCES L. IPPOLITO, and
KEVIN W. CHERRY, *Administrative Patent Judges*.

McNAMARA, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. §35 U.S.C. §28(a) and
37 C.F.R. § 42.73

BACKGROUND

Pursuant to 35 U.S.C. § 321 and section 18 of the AIA,¹ Interactive Brokers LLC; CQG, INC.; CQG, LLC (f/k/a CQGT, LLC); NinjaTrader Group, LLC; NinjaTrader, LLC; TradeStation Group, Inc.; TradeStation Securities, Inc.; and TradeStation Technologies, Inc. (collectively, “Petitioner”) filed a Petition, Paper 4 (“Pet.”) for covered business method patent review of claims 1–22 (the “challenged claims”) of U.S. Patent No. 8,380,611 B2 (the ‘611 Patent). On Aug 23, 2016, we instituted a covered business method patent review of the challenged claims. Paper 14 (“Dec. to Inst.”). Chart Trading Development LLC filed a Patent Owner Response (Paper 26 (“PO Resp.”)) and Petitioner filed a Reply (Paper 36, “Pet. Reply”). Patent Owner also filed a Contingent Motion to Amend (Paper 27, “Mot. to Amend”), Petitioner filed an Opposition to Patent Owner’s Motion to Amend (Paper 35, “Opp. to Mot. to Amend”) and Patent Owner filed a Reply (Paper 40, “Reply to Opp. to Mot. to Amend”). Petitioner filed a Motion to Exclude certain evidence (Paper 43, “Mot. to Exclude”), Patent Owner filed an Opposition to Petitioner’s Motion to Exclude (Paper 45, “Opp. to Mot. to Exclude”) and Petitioner filed a Reply (Paper 47, “Reply to Opp. to Mot. to Exclude”).

The record includes a transcript of an oral hearing conducted on May 11, 2017. Paper 50 (“Hr’g Tr.”). Upon consideration of all the arguments and evidence of record we conclude that claims 1–22 recite subject matter that is ineligible for patent protection under 35 U.S.C. § 101 and that claims

¹ Leahy-Smith America Invents Act, Pub. L. 112-29, 125 Stat. 284, 329 (2011) (“AIA”).

1–22 are unpatentable as obvious under 35 U.S.C. § 103(a). We further deny Patent Owner’s Motion to Amend.

THE ’611 PATENT (EXHIBIT 1001)

The ’611 Patent discloses “methods and apparatus for providing an interactive graphical representation of a market.” Ex. 1001, 1:51–52. The ’611 Patent states that financial information used to create a graph may be information typically sorted in a tabular format, such as a spreadsheet. *Id.* at 1: 29–40, 5:50–53. According to the ’611 Patent, graphs are easier to read and understand than tables and interactive graphs facilitate trading. *Id.* at 1:43–49, 4:34–51, 5:29–42. The system in the ’611 Patent can be implemented using a computer network in which a suitable workstation implements a graphical trading interface application and communicates with a server linked to a back office clearing center that causes transactions to be cleared and verified. *Id.* at 4:34–5:2; Figs 1–2.

The graphical trading interface application may include an application program interface or the graphical trading interface application may be resident in the memory of a server. *Id.* at 4:35–37. The ’611 Patent discloses that graphical trading interface application and application program interface may be an application that is discrete from the electronic trading application. *Id.* at 4:38–41. In addition, the only distribution to the user may be a graphical interface (GUI) that allows the user to interact with the graphical trading interface application at the server. *Id.* at 4:42–44.

By manipulating an input device, a user can zoom into a portion of a graph having first and second axes representing two related parameters in connection with financial instrument curves shown in the graph. *Id.* at 6:46–47. Zooming can be accomplished by selecting a particular vertical or

horizontal column of fixed width or by specifying a desired width of the graph, for example by entering a range of parameters into an overlay displayed on the graph. *Id.* at 6:47–7:17; Figs. 3–4. In response to zooming, the system displays a graphical trading interface that includes first and second symbols corresponding to specific parameters, such as bids and offers. *Id.* at 7:14–56; Fig. 5. In response to user actions, such as moving a cursor over a point, an information overlay may be displayed. *Id.* at 7:57–8:3; Fig. 6. The '611 Patent also discloses displaying a trading dialog box overlay in response to a user's selection of a portion of the graph to allow the user to place a trade directly from the graphical trading interface. *Id.* at 8:4–16; Fig. 7. The trading dialog box allows the user to enter parameters, such as a price and transaction size, to complete buy and sell transactions by selecting a button, and to close the dialog box. *Id.* at 8:17–34. The steps of the method are summarized in Figure 11. *Id.* at 10:6–22. Other forms of graphical trading interfaces may also be provided. *Id.* at 8:36–38; Figs. 8–10.

ILLUSTRATIVE CLAIM

1. A method comprising the steps of
 - on a display terminal of an electronic trading system, displaying a graph having a first axis and a second axis, wherein the graph includes a curve corresponding to a range of values of a financial instrument;
 - allowing a user to select a portion of the graph; and
 - in response to the user selection of the portion of the graph, displaying a trading dialog box on the display of the workstation, the dialog box being automatically populated with values for trading, the values based on the values of the selected portion of the graph.

CLAIM CONSTRUCTION

In our Decision to Institute, we applied the broadest reasonable interpretation to the following terms that required construction:

Curve

We construed “curve” to mean “a graphical plot of data points corresponding to parameter values on one or more axes.” Dec. to Inst. 12. Neither party disputes this construction.

Fair Value Curve

We construed “fair value curve” to mean “a plot of data points representing market value against another parameter.” *Id.* Neither party disputes this construction.

Trading Dialog Box

We construed “trading dialog box” to mean “a display on a display terminal through which the user can view values for trading and selected information.” *Id.* at 13. Patent Owner proposes that we construe this term to mean “an interface that appears as an overlay and enables exchange of input and output between a user and a computer.” PO Resp. 24–29. Petitioner contends that Patent Owner’s construction does present a material dispute, noting that Patent Owner’s testifying expert, Mr. Molokhia states that a pop-up window, such as that Friesen is an example of an overlay. Pet. Reply 4 (citing Ex. 1024, Transcript of Deposition of Nazaar Molokhia (“Molokhia Tr.”) 54:19–24).

Upon review, we agree with Patent Owner that the specification of the ’611 Patent refers to the trading dialog box as an overlay and that the dialog box is used for exchanging information with the computer. PO Resp. 27–28. For purposes of this Decision, we apply Patent Owner’s proposed

construction and construe “trading dialog box” to mean “an interface that appears as overlay and enables exchange of input and output between a user and a computer.”

Workstation

Neither party previously sought a construction of “workstation” and in our Decision to Institute, we accorded this term its ordinary meaning. Patent Owner now proposes that we construe “workstation” to mean “a display terminal.” PO Resp. 29–37. Our analysis of the construction of “trading dialog box” in our Decision to Institute we noted that claims 1 and 12 recite that the display is displayed on “the workstation,” a term for which there is no antecedent basis. Dec. to Inst. 13. Method claim 1 recites “displaying a trading dialog box on the display of the workstation.” Patent Owner’s proposed construction effectively amend the claim by substituting “display terminal,” which has an antecedent basis for the term “workstation,” which has no antecedent basis. However, the antecedent in the claim recites “a display terminal of an electronic trading system,” not a display terminal of a workstation.

Nevertheless, according to Patent Owner the meaning of the claim would be understood by persons of ordinary skill and Petitioner did not argue that the claim was indefinite under 35 U.S.C. § 112. PO Resp. 31. Patent Owner correctly points out that indefiniteness under 35 U.S.C. § 112 was not presented as an issue in this proceeding and is not an issue we considered. Neither our Decision to Institute nor this Final Decision is based on indefiniteness.

In view of Patent Owner’s position that meaning of the claim would be understood by persons of ordinary skill, that Petitioner has not argued

indefiniteness, and that none of our decisions in this covered business method patent review are based on indefiniteness, we need not further construe the term “workstation.”

ORDINARY SKILL IN THE ART

Petitioner contends that one of ordinary skill in the art includes someone who, through education or practical experience, possesses the equivalent of a bachelor’s degree in computer science, information science, or a related field and has at least two years of work experience developing or implementing user interfaces for electronic trading systems. Pet. 13 (citing Ex. 1002, Declaration of Bernard S. Donefer (“Donefer Decl.”) ¶ 45).

Patent Owner contends that a person of ordinary skill would have a bachelor’s degree in computer science or equivalent experience, and at least three years of experience in designing and/or developing user interfaces, including experience designing and/or developing graphical user interfaces for electronic trading. PO Resp. 13 (citing Ex. 2027, Declaration of Nazaar Molokhia in Support of Patent Owner Response (“Molokhia Resp. Decl.”) ¶¶ 14–15). Notwithstanding their one year difference in experience level, we find the parties’ assessments of the level of ordinary skill not to be materially different.

QUALIFICATIONS OF PETITIONER’S TESTIFYING EXPERT

Petitioner relies on the testimony of Bernard S. Donefer. Mr. Donefer testifies that his expertise is in software, technology, trading, exchanges, electronic trading and business practices in financial markets, has a B.A. in Economics, an M.B.A. in finance, 35 years of experience in software, technology, and financial services, has written computer programs on several different computer platforms in several different computer

languages, has testified as an expert in several forums, and has spoken and written on related topics. Ex. 1002 ¶¶ 3–7.

Patent Owner argues that we should disregard Mr. Donefer's testimony because he lacks requisite education and experience to satisfy either party's definition of a person of ordinary skill. PO Resp. 14–21. Patent Owner acknowledges that Mr. Donefer “may well be experienced with the business considerations of traders and financial institution by virtue of his degrees in two fields of business and his work experience in the business departments of various financial institutions.” PO Resp. 20. Patent Owner argues, however, that Mr. Donefer's business experience is not a substitute for the relevant technical experience needed to testify as to claim construction, the scope of the '611 Patent claims, the state of the art, anticipation or obviousness. *Id.* at 20–21. In addition to arguing that Mr. Donefer does not have the technical background that his testimony states is a baseline for one of ordinary skill, Patent Owner notes that Mr. Donefer has always held non-technical positions as a project manager and testified that he never used trading software allowing a trader to place a trade directly from a graph and that he does not know when products with such features were introduced to the market. *Id.* at 18–20.

Petitioner contends that Mr. Donefer is more experienced than a typical end user of an electronic trading system and has been developing such systems for many years. Pet. Reply 3–4. Petitioner emphasizes that with his bachelors in economics, and MBA in finance Mr. Donefer also minored in information systems. *Id.* at 2. Petitioner further notes that, as a consultant and project manager, Mr. Donefer has extensive experience developing, designing, and implementing graphical user interfaces (GUIs)

and that Mr. Donefer was recognized by Fidelity Investments for his work in developing an electronic trading system. *Id.* at 2–3. Although, that system did not represent market information in a graph, information it provided to other terminals, such as those used by Bloomberg, may have been presented graphical information. Ex. 2026, Transcript of Deposition of Bernard S. Donefer (“Donefer Tr.”), 72:16–73:11.

At his level of professional responsibility Mr. Donefer works on system architecture to accommodate trader needs—he acknowledges that he does not code programs and in the college courses he teaches Mr. Donefer does not teach programming. Donefer Tr., 30:10–33:18, 36:19–22. Nevertheless, Mr. Donefer takes courses in programming languages, such as C++, R and Python, to keep up with languages that his students are using. *Id.* at 54:4–56:5. The college level courses Mr. Donefer teaches in IT in financial markets and financial information systems address order management systems, and Mr. Donefer occasionally invites order management vendors to demonstrate such systems to students. *Id.* at 35:10–36:13. Mr. Donefer teaches prospective business analysts about business processes and business problems in order to design solutions, focusing on turning requirements into documentation a coder can use to implement a business process, rather than on coding itself. *See id.* at 38:10–41:8

There is no requirement imposed by the Federal Rules of Evidence that an expert’s qualifications perfectly match the field of the patent at issue. *See SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010). The patent claims before us concern a method and an apparatus for providing an interactive graphical representation of a market. Independent method claim 1 recites displaying a graph and a trading dialog box on a

display of a workstation. Dependent claims recite the elements of the displayed trading dialog box and user selection options. Independent apparatus claim 9 recites a processor programmed to cause a computer to display a graph and trading dialog box. In the independent and dependent apparatus claims, the programmed processor carries out steps similar to those recited in the method claims. None of the claims in this proceeding recites technical details that require an extensive knowledge of programming or computer design. Mr. Donefer's background in electronic trading system architectures and supervising the development of graphical user interfaces, along with his many years of experience, are sufficient for him to render opinions as to the subject matter of the claims before us. In addition, the Board can accord proper weight to the testimony of each party's expert witness. Therefore, in the context of this covered business method patent review, we are persuaded that we can properly weigh Mr. Donefer's testimony.

§101 SUBJECT MATTER ELIGIBILITY

Petitioner contends that the claims of the '611 Patent do not recite patent eligible subject matter under 35 U.S.C. § 101 because they are directed to an abstract idea that is not transformed into a patent eligible application. Pet. 28–39. A claim falls outside § 101 where (1) it is “directed to” a patent-ineligible concept, *i.e.*, a law of nature, natural phenomenon, or abstract idea, and (2), if so, the particular elements of the claim, considered “both individually and ‘as an ordered combination,’” do not add enough to “‘transform the nature of the claim’ into a patent-eligible application.” *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014); *see Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297–98

(2012). The first stage filter is a meaningful one, sometimes ending the § 101 inquiry, but the two stages involve overlapping scrutiny of the content of the claims and there can be close questions about when the inquiry should proceed from the first stage to the second. *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). The first stage inquiry looks at the focus of the claims and their character as a whole and the second stage, when reached, looks more precisely at what the claim elements add—specifically, whether, in the Supreme Court’s terms a claim identifies an “inventive concept” in the application of the ineligible matter to which (by assumption at stage two) the claim is directed. *Id.*

Applying the first step of the *Alice* analysis, Petitioner contends that independent claims 1 and of the ’611 Patent are directed to the abstract idea of using a graphical representation of a market to make trades. Pet. 30–31 (citing recitations in independent claims 1 and 12 of a graph including a curve corresponding to a range of values of a financial instrument used to populate values for trading). According to Petitioner, the claims are drawn to an abstract idea because using a graphical representation of a market when making trades is a longstanding fundamental economic concept and the claims of the ’611 Patent can be carried out manually using pencil and paper. *Id.* at 31–33. Addressing the limitations that recite selecting a portion of the graph and displaying a trading dialog box automatically populated with values, Petitioner argues that a human could manually determine values for trading based on the values of the selected portion of the graph and create a paper that displays those values for trading. *Id.* at 33.

Patent Owner contends that the claims of the ’611 Patent are not drawn to an abstract idea. Patent Owner cites *Enfish, LLC v. Microsoft*

Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016) for the proposition that claims directed to software are not inherently abstract and can be directed to non-abstract improvements in computer technology. PO Resp. 33–34.

Patent Owner argues that Petitioner ignores the actual claim language of '611 Patent and overgeneralizes the claimed invention. PO Resp. 1–2. 33–34 Independent claims 1 and 12 recite populating a trading dialog box with values for trading, but do not recite carrying out trades, nor are there any limitations on the process by which such trades are executed. Patent Owner's testifying expert, Mr. Molokhia, acknowledges that charting always has been fundamental to identifying patterns based on price movement and signals for buying and selling, i.e. technical analysis. Molokhia Tr. 60:2–61:4, 62:19–22. Thus, unlike the circumstances in *DDR Holdings, LLC v. Hotels.com L.P.*, 773 F.3d 1245 (Fed. Cir. 2014) cited by Patent Owner (PO Resp. 33), where the claimed solution to retaining website visitors arises specifically in the realm of computer networks, and not in the brick and mortar context, the claims of the '611 Patent are not directed to a problem that arises only in the context of Internet or computer applications.

Nevertheless, Patent Owner, contends that the claims of the '611 Patent recite eligible subject matter because they are directed to providing a specific graphical representation of a market where a “dialog box,” is preformatted with information corresponding to a user's selection of the graph, allowing the user to enter an order via the graphical user interface, thereby making the graph itself an interactive read/write interface. PO Resp. 40. Patent Owner argues that both the Petition and the Decision to Institute fail to consider the claims in light of the specification and improperly consider whether the claims involve a patent ineligible concept,

as opposed to inquiring whether the claims as a whole are “directed to” patent-ineligible subject matter. *Id.* at 37–38. Patent Owner argues that the specification explains that “read only” graphs in prior art electronic systems were used by traders as “a source of information or an interaction point to populate a parameter as part of another workflow process initiated from outside the chart” and that such graphs were not read/write or “interactive” as claimed. *Id.* 39–40 (citing Ex. 2027, Molokhia Resp. Decl. ¶50).

Citing *Enfish*, 822 F.3d at 1335, Patent Owner also contends that the claimed subject matter is eligible for patent protection because the claims recite an improvement in computer functionality. PO Resp. 1–2, 36–43. Patent Owner argues that the claims do not recite the abstract idea of looking at a chart on a computer (or paper) and making a trade, but recite a specific improvement in computer capabilities, namely an improved graphical user interface that allows a trader to submit a trade directly on the graph via the GUI. *Id.* Citing *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016), Patent Owner argues that the claims are patent eligible because they recite a particular arrangement of elements that is a non-generic, non-conventional, technical improvement over prior art ways of trading with graphical user interfaces. *Id.* at 2.

We consider the claim as a whole, including the limitations that recite displaying a graph on a display term, allowing a user to select a portion of the graph, and displaying a trading dialog box, which we construed to mean *an overlay on a displayed graph through which a user may exchange information with a computer*, in which the box is automatically populated with values for trading based on the values of the selected portion of the graph. Guided by *Enfish* in our analysis under Step 1 of the *Alice* test our

analysis considers whether the claims are directed to improved computer functionality. We are persuaded that they are not.

The invention recited in independent method claim 1 and independent apparatus claim 12 allows a user to select a portion of a graph (e.g., by running a cursor over a portion of the graph (*see* Ex. 1001, 7:63–64)) and view a responsive display of an interactive dialog box that is automatically populated with values for trading. That the displayed values are for trading and are based on the selected portion of the graph does not alter the fact that the abstract idea being claimed is the use of a graph to display an interface. In *Enfish*, the claims were directed to an improvement in how the computer worked, i.e., how the computer implemented a self-referential database. In the '611 Patent, the claims are not directed to improvements in how the computer carries out a trade—they are directed to an apparatus and method for providing and graphical representation of a market and populating a trading dialog box.

In determining whether the claims at issue are directed to a judicial exception, such as an abstract idea, we look to other cases to assist in our determination of whether the claims “focus on a specific means or method that improves relevant technology” or are “directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery. *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F. 3d 1299, 1312–1314 (Fed. Cir. 2016). In *Intellectual Ventures I v. Erie Indemnity Co.*, 850 F.3d 1315 (Fed. Cir. 2016), the court found that a record locating method and system using an index component that identifies category and domain tags associated with a record was directed to the abstract idea of creating and using an index to search for and retrieve data. In *Apple, Inc. v.*

Ameranth, Inc., 842 F.3d 1229 (Fed. Cir. 2016), the court found that an independent claim drawn to information management and synchronous communications system not patent-eligible. In *Ameranth* claim1 recited an information management and synchronous communications system for generating and transmitting menus in which a software application:

facilitates the generation of the second menu by allowing selection of catagories [sic] and items from the first menu [stored on said storage device and displayable in a window of said graphical user interface], addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus [stored on said data storage device and displayable in a window of said graphical user interface]

Id. at 1234. The first menu is displayed to a user and another menu may be generated in response to the selections made. *Id.* The court found that “[t]he patents claim systems including menus with particular features. They do not claim a particular way of programming or designing the software to create menus that have those features, but instead claim the resulting systems.” *Id.* at 1241.

Much like the claims in *Ameranth*, the claims of the ’611 Patent recite a result, as opposed to an improvement in the functioning of the computer. In a manner similar to a second menu being displayed to the user after making a selection from a first menu in *Ameranth*, independent claims 1 and 12 recite the display of a trading box in response to a user’s selection of a portion of a graph. The claims next recite that the trading dialog box is “automatically populated with values for trading.” Patent Owner argues that, in light of the specification, the claims of the ’611 Patent are not drawn

to “simply displaying a graph or other information,” but to a specific improvement in computer capabilities “namely, the improved graphical user interface that allows a trader to submit a trade *directly on the graph via the GUI.*” PO Resp. 38. The claims of the ’611 Patent do not recite, nor does the specification describe, features concerning computer functions associated with achieving such a configuration. The claims are not directed to an improvement to computer functionality or the way computers operate, but merely to the resulting system, i.e., to independently abstract ideas that use computers as tools, in this case as tools to display selected information that can be used to trade financial instruments.

Applying the second step of the *Alice* analysis, Petitioner further contends that the generic computer components recited in the independent method claims 1 and 12, e.g., a display on a workstation, are purely conventional and do not provide the inventive concept to transform the abstract idea into a patentable eligible application. Pet. 33–36. Petitioner contends that limitations reciting the display of an interactive trading box on the display of a workstation are not transformational because they “amount to nothing more than an instruction to apply the abstract idea of chart-based trading using generic computer elements.” *Id.* at 35. According to Petitioner, the functions performed by the GUI and workstation are purely conventional, the display of an interactive dialog box is a routine, conventional practice, “[n]o inventive interrelationship or configuration of these conventional elements is recited, and no improvement to the computer art is recited or even disclosed in the ’611 patent.” *Id.* at 35–36. Petitioner also argues that dependent method claims 2–4, 9 and 11, which recite limitations concerning the values and symbols that populate the trading

dialog box, are not meaningful limitations and do not transform the abstract idea of independent claim 1 into a patent eligible invention. *Id.* at 36.

Petitioner advances similar arguments concerning dependent claims 5–7, which recite various axes and aspects of the curve, and dependent claims 8 and 10, which recite allowing the user to select symbols on the graph. *Id.* at 37–38. Petitioner also argues that a similar analysis applies to corresponding apparatus claims 12–22 of the '611 Patent, which include language similar to that of claims 1–11. *Id.* at 38. Petitioner specifically referred to claims 1 and 12 in asserting that the independent claims of the '611 Patent are directed to the abstract idea of using a graphical representation of a market to make trades. Pet. 30–31. The language of independent claim 12 and dependent claims 13–22 mirrors that of independent claim 1 and dependent claims 2–11. Thus, we agree with Petitioner that the same analysis applies to claims 1–11 and 12–22.

Patent Owner's testifying expert contends that allowing efficient execution of trades as a result of detailed technical analysis transforms a read only chart into an interactive chart. Molokhia Resp. Decl. ¶¶ 50, 62. This portion of Mr. Molokhia's testimony only confirms that Patent Owner considers the invention to be drawn to an abstract result, as opposed to a transformative implementation under step 2 of the *Alice* analysis.

Patent Owner also argues that the claims are directed to a non-conventional and non-generic arrangement of components that enable a specialized graphical user interface that serves as a trading interface. PO Resp. 47–50. According to Patent Owner, the '611 Patent claims are like those in *Bascom* and *DDR Holdings* because they recite a specific discrete implementation of trading with graphical user interfaces and are directed to a

nonconventional trading interface. *Id.* at 47–48. Patent Owner further contends that the claims of the '611 Patent are unlike those found ineligible in *Electric Power* because those claims did not recite a particular implementation of the functions of gathering, analyzing, and displaying information in real time using anything other than conventional generic technology. *Id.* at 48–49.

Patent Owner does not cite any description in the '611 Patent of a non-conventional implementation of the claimed graphical user interface. Patent Owner's primary basis for arguing that the graphical user interface is transformative is that it is used as a trading interface. At the Oral Hearing, Patent Owner argued that the claims at issue are more like those involved in the *Trading Technologies* decision. Tr. 32:22–33:11. The claims in this case are distinguished from those addressed by the Federal Circuit's non-precedential decision in *Trading Technologies Int'l, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017). There the representative claim was drawn to "[a] method of displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface." *Trading Techs.*, 675 F. App'x. at 1003. A significant factor in the decision that the claims recite an improvement in the way computers operate was the patent's description of a "static trading index" and the recitation in the representative claim of displaying a price level along a "common static price axis." *Trading Techs.* 675 Fed. Appx. at 1003–4.

The court noted that "the patents are for '[a] method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood a trader will have

orders filled at desirable process and quantities.” *Id.* The district court noted that the claims were not abstract because they addressed a delay in electronic order placing that did not exist in open outcry systems and live trading pits. *Trading Technologies Int’l. v. CQG, Inc.*, Case 1:05-cv-04811 Memorandum Opinion and Order (N.D. Ill. Feb. 24, 2015) at 4. The Federal Circuit agreed and observed that “[i]n the patented system bid and asked prices are displayed dynamically along the static display, and the system pairs orders with the static display of prices and prevents order entry at a changed price.” *Trading Techs.*, 675 F. App’x. at 1003. Echoing the district court, the Federal Circuit stated that the claims are drawn to “improvements in existing graphical user interface devices that have no ‘pre-electronic trading analog’ and recite more than ‘setting, displaying and selecting data or information that is visible on [the graphical user interface] device.’” *Id.* at 1004. Thus, the claims were not directed to an abstract idea under step 1 of the *Alice* test.

Citing the “static price index”, both the Federal Circuit and the district court also determined the claims in *Trading Technologies* were drawn to an inventive concept under step 2 of the *Alice* test. The representative claim recites a graphical user interface in which one axis is a “common static price axis.” *Id.* at 1003. The Federal Circuit agreed with the district court’s view that because of this feature the claims are not drawn to routine or conventional use of computers or the Internet. *Id.* at 1004.

In contrast to the claims in *Trading Technologies*, taken as a whole, independent claims 1 and 12 recite, in result-focused functional language, displaying information on a graph and, in response to the user’s selection of a portion of the graph, displaying a trading dialog box that is populated with

values for trading based on the portion of the graph selected by the user. With the claims limited to an trading dialog box that is populated with values, and given the absence of a description in the specification of technology underlying how the display is so configured, nothing in the claims, understood in light of the specification, requires anything other than off the shelf, conventional computer and display technology for gathering, sending, and presenting the desired information. Nothing in the patent suggests that the displays needed for the claimed purpose are not readily available. *See DDR Holdings, LLC v. Hotels.com*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) (finding an inventive concept in modifying conventional mechanics behind a website display to produce a dual source integrated hybrid display).

In consideration of the above, we agree with Petitioner that the claims are drawn to patent-inelegible subject matter under step 1 of the *Alice* and, as an ordered combination the claim elements do not transform the nature of the claim into a patent eligible application under step 2 of the *Alice* test. We also agree with Petitioner that the dependent claims do not recite limitations that transform the abstract concept recited in the claims from which they depend into a patent eligible application. Thus, we conclude that Petitioner has demonstrated that claims 1–22 of the '611 Patent recite subject matter that is ineligible for patent protection.

OBVIOUSNESS UNDER 35 U.S.C. § 103(a)

Introduction

We instituted trial on Petitioner’s challenge to claims 1–22 as obvious over the combination of Friesen², Jones³ and Kirwin.⁴ A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The test for obviousness is whether the combination of references, taken as a whole, would have suggested the patentees’ invention to a person having ordinary skill in the art. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *KSR*, 550 U.S. at 417. To reach this conclusion, however,

² International Patent Application WO 01/16852 A2, published Mar. 8, 2001 (Ex. 1016)

³ U.S. Patent Application US2002/0120551 A1, published Aug. 29, 2002 (Ex. 1017)

⁴ International Patent Application WO/01/46841 A2, published June 28, 2001 (Ex. 1018)

requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.* However, a precise teaching directed to the specific subject matter of a challenged claim is not necessary to establish obviousness. *KSR*, 550 U.S. at 418. As the Supreme Court recognized, in many cases a person of ordinary skill “will be able to fit the teachings of multiple patents together like pieces of a puzzle,” recognizing that a person of ordinary skill “is also a person of ordinary creativity, not an automaton.” *Id.* at 420–21. Against this general background, we consider the references, other evidence, and arguments of the parties.

Much of the dispute in this case centers on the parties contentions concerning the claimed features of selecting a portion of the graph and an interactive trading dialog box. For that reason, a comparison of exemplary trading charts disclosed in the ’611 Patent and Friesen, the primary reference cited by Petitioner, is useful. Figures 5 and 7 of the ’611 Patent are illustrative. Figure 5 is shown below.

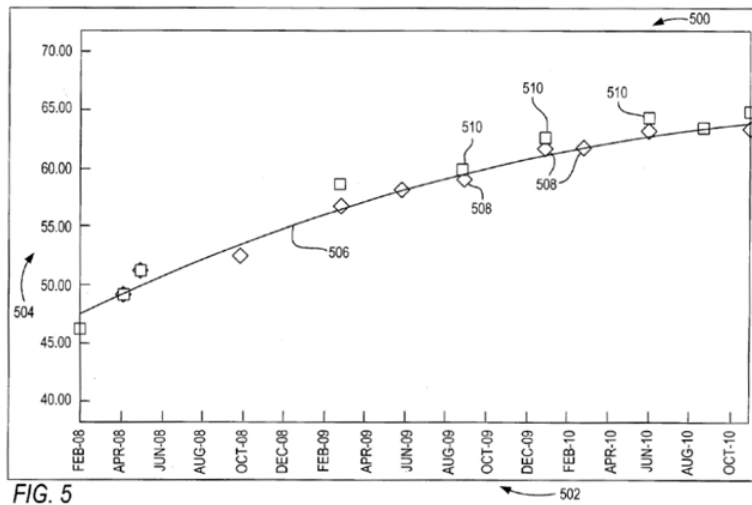


Figure 7 of the '611 Patent is shown below.

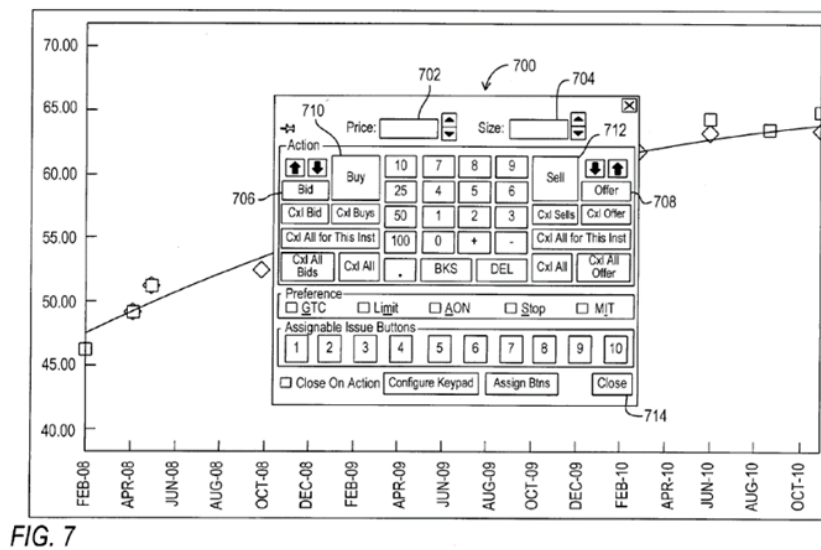


Figure 7 illustrates Figure 5 with a trading box overlay 700 displayed, in response to the user's selection of a portion of the graph in Figure 5. *Id.* at 7:40–49. If the user selected a bid, an offer, or the curve, price field 702 and/or size field 704 may or may not be pre-filled with information corresponding to the selection and the user may alter the value in one or both fields prior to selecting a buy button 710 or sell button 712 to complete the transaction. *Id.* at 8:9–16.

Figure 3A of Friesen is shown below.

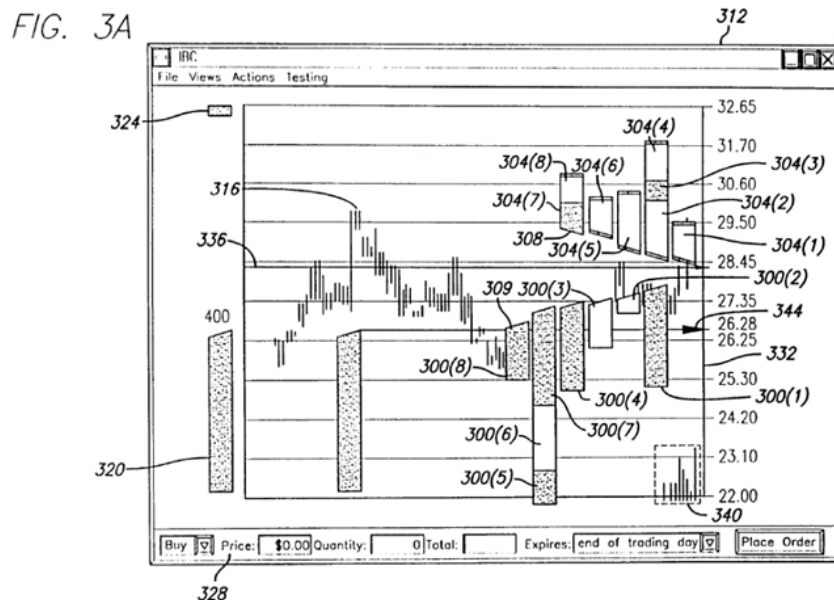


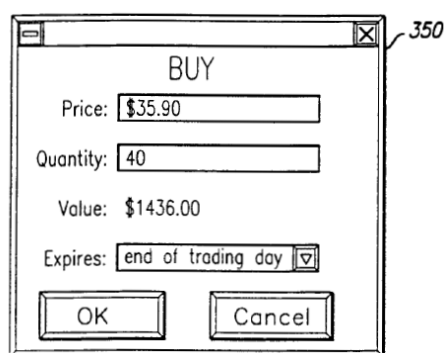
Figure 3A discloses a priority view chart in which “orders 300, 304, are displayed at a location corresponding to their value with respect to the value axis 332.” Ex. 1016, 10:11–13. The rightmost bid is the bid having the highest value, the rightmost offer is the offer having the lowest value, such that the edges of the icons form a triangle pointing to the separation in value between the last lowest offer and the last highest bid. *Id.* A pop-up window can be invoked to display the precise values and quantity of the selected order. *Id.* The display in Figure 3A of Friesen allows a trader to

view trends in bids and offers, e.g., to infer from an almost equal number of bids and offers that the market is stable and requires no immediate action because item value is not likely to change dramatically in the near future, or to determine from rising numbers of bids that demand is increasing and adjusting a bid plan accordingly. *Id.* at 11:12–20.

Friesen's priority view also allows the user to trade directly from the chart. In the Figure 3A embodiment

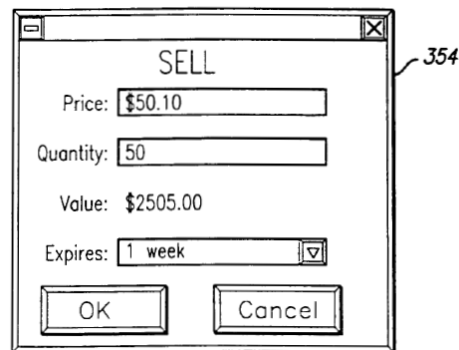
the trader submits an order by simply selecting either an offer token 324 or bid token 320 using a using a pointing device. After being selected, the trader adjusts the size of the offer or bid token 324, 320 until the size of the token matches the desired quantity of the order . . . the token is dragged to a location on the screen which corresponds to the desired value of the order. . . after reaching the desired value, the trader releases the pointing device button and a Buy pop-up window, as shown in Figure 3d is displayed with the bid order information. The Buy pop-up window 350 allows the trader to modify the order information (value, quantity, expiration), cancel the order or submit the order with the presently displayed window,

Id. at 13:17–25. A sell window 354 pops up when the order is to sell an item. Friesen's buy and sell pop-up windows are illustrated in Figures 3D and 3E and reproduced below.



A screenshot of a 'BUY' pop-up window labeled 350. It contains the following fields: 'Price' with a text box showing '\$35.90', 'Quantity' with a text box showing '40', 'Value' with a text box showing '\$1436.00', and 'Expires' with a dropdown menu showing 'end of trading day'. At the bottom are 'OK' and 'Cancel' buttons.

Figure 3D of Friesen



A screenshot of a 'SELL' pop-up window labeled 354. It contains the following fields: 'Price' with a text box showing '\$50.10', 'Quantity' with a text box showing '50', 'Value' with a text box showing '\$2505.00', and 'Expires' with a dropdown menu showing '1 week'. At the bottom are 'OK' and 'Cancel' buttons.

Figure 3E of Friesen

Figure 4 of Friesen is shown below.

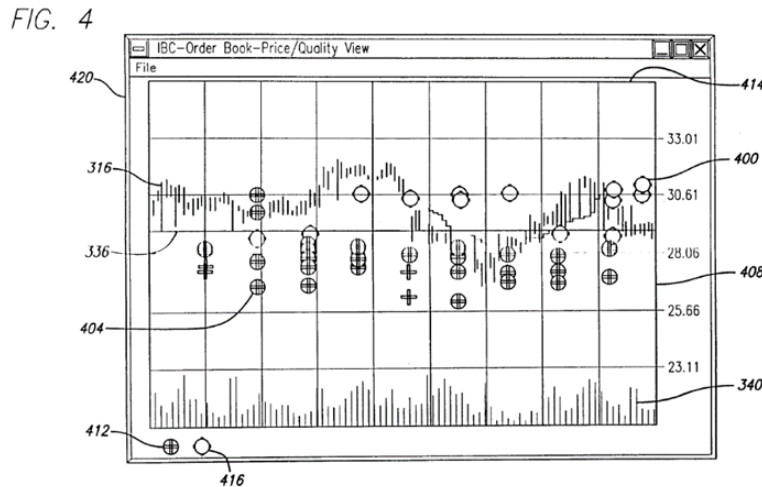


Figure 4 illustrates one of several alternative user interfaces. The value/quantity view 420 in Friesen's Figure 4 illustrates the market for an item using a first axis of values 408, a second axis 412 for quantity, in which the location of each offer icon 400 and each bid icon 404 represents the value for the offer or bid and the quantity for which the offer or bid is made. Ex. 1016, 15. Both Figures 3A and Figure 4 illustrate a historical chart 316 and an action line marker 336 that identifies values at which the trader should act, e.g., if the value of the item rises above the action value or falls beneath it. *See id.* 13–15.

In the Figure 4 embodiment, orders are placed by selecting an offer token 416 or bid token 412 and moving the token to a location that corresponds to the desired quantity and value; to purchase immediately, the trader drags a bid token 412 to the location over any offer token; to sell immediately the user drags an offer token 416 to the location over any bid token. *Id.* at 15:28–32. In the case of an immediate purchase, a window pops up displaying a bid order with value and quantity equal to that of the offer token; in the case of an immediate sale a window pops up displaying

an order with value and quantity equal to that of the bid token. *Id.* at 15:32–16:2.

Independent Claim 1

Independent method claim 1 recites (i) displaying a graph with first and second axes and a curve corresponding to a range of values of a financial instrument, (ii) allowing a user to select a portion of the graph, and (iii) in response to the user’s selection displaying on the workstation a trading dialog box automatically populated with values for trading based on the values of the selected portion of the graph.

Petitioner cites Friesen as disclosing an electronic trading display in which, by dragging bid and offer tokens, a user selects a portion of a graph and a pop-up window populated with values based on the portion of the graph selected appears and in which the user is allowed to adjust an order before submitting it. Pet. 39–41 (citing Ex. 1016, 13–17, Figs 3A–3E, 4; Ex. 1002, Donefer Decl. ¶¶ 49–55).

Patent Owner argues that Friesen fails to teach or suggest “allowing a user to select a portion of the graph” or “in response to the user selection of the portion of the graph displaying trading dialog box being automatically populated with values for trading” as claimed. PO Resp. 51. Patent Owner argues that Friesen’s token drag and drop approach discussed above requires a user to select a token from off the graph, before moving the token to a desired price on the graph and therefore before subsequent generation of the pop-up window. *Id.* at 53. According to Patent Owner, because the bid and offer tokens are first selected by a user off the graph, and dropped onto the graph, Friesen does not disclose “allowing a user to select a portion of the graph.” *Id.* at 54. Patent Owner’s argument is not persuasive. The claims

do not recite explicitly how the user selects a portion of the graph. In an embodiment described in the '190 Patent specification, a user may select a portion of the graph by running a cursor over that portion. Ex. 1001, 7:25–28. We do not see a significant difference between running a cursor over the graph to select a portion of the graph and running a token over a graph to a selected point on the graph. Neither the cursor nor the token is part of the graph itself. Thus, we agree with Petitioner that in Friesen the token is dragged and released at a chosen location on the graph, thereby selecting a portion of the graph. Pet. Reply. 13–14.

Although Petitioner contends that Friesen discloses allowing the user to select a portion of the graph as recited in the claims of the '611 Patent, Petitioner argues, that to the extent Friesen's drag and drop approach is deemed not to meet this limitation, the limitation is disclosed by the touch screen in Jones. *Id.* at 41 (citing Ex. 1017 ¶¶ 21, 34, 39, 51–59, Fig. 5C; Ex. 1002 ¶¶ 56–57). Jones combines existing financial software, trading software and interactive screen technology into an integrated system in which a trader can touch a plot of moving stock prices at a desired position to indicate an order that remains displayed on the graph as the market continues to move. Ex 1017 ¶ 39. Jones discloses as prior art a browser pop-up window of a graph showing a 50 day stock price moving average in which a vertical bars on the graph represent the high and low trading prices on a given day. *Id.* ¶ 7. Figure 4 of Jones illustrates a chart and trading screen 40 tracking daily price information in which the bottom portion of the screen allows the user to select a buy or sell command using the input-output capabilities of the screen, for example by a touch screen or by moving a mouse. *Id.* ¶¶ 41, 51–54.

Patent Owner argues that Jones teaches a sequential process that involves using an informational graph, but that because the user cannot trade directly from the graph, Jones is a read-only historical information tool and does not disclose an interactive graphical representation of a market. PO Resp. 56. Patent Owner fails to recognize that Jones explicitly states that a trader can “initiate an order merely by touching the screen at a point on the graph” (Ex. 1017 ¶ 34) and “can simply touch the plot of moving stock prices at a desired position to indicate an order” (*id.* ¶ 39). Thus, we agree with Petitioner that Jones discloses the selection feature as recited in the claim 1. Patent Owner’s arguments that Jones fails to disclose a trading dialog box do not address the fact that Petitioner cites Jones as disclosing the selecting feature, not for popping up a trading dialog box.

Petitioner also contends that Friesen discloses the interactive trading box recited in the claims of the ’611 Patent. Pet. Reply 13–14. Figures Figs. 3D and 3E of Friesen discussed above illustrate a trading dialog box through which the user can exchange information with the computer. As discussed above, in Friesen, the pop-up window corresponds to the type of transaction initiated by token selection, e.g., a buy window or a sell window, populated with values. We have construed the trading dialog box recited in the claims to be an overlay through which a user may exchange information with a computer. Friesen does not state explicitly that the pop-up window appears as an overlay in the same window as the chart, although Friesen discusses the use of an overlay relative to Figures 12 and 15 (Ex. 1016, 26:22–25, 31:19–20) and use of an overlay would be a well-known implementation. In addition, Petitioner cites the testimony of Patent

Owner's expert Mr. Molokhia that a pop-up window is an example of an overlay. *Id.* at 5 (citing Ex. 1024, Molokhia Tr., 54:19–24).

Patent Owner contends that Friesen does not disclose the trading dialog box recited in claim 1. According to Patent Owner, because Friesen does not teach or suggest allowing a user to select a portion of the graph, Friesen cannot teach or suggest displaying a trading dialog box in response to the a selection. PO Resp. 53–54. We reject Patent Owner's premise because, as discussed above, we agree with Petitioner that Friesen discloses allowing a user to select a portion of the graph. Thus, we agree with Petitioner that Friesen discloses the limitation in claim 1 that recites “in response to the user selection of a portion of the graphs, displaying a trading dialog box on the display of the workstation, the dialog box being populated with values for trading, the values based on the values of the selected portion of the graph.”

Petitioner also argues that, to the extent that Friesen is considered not to disclose a trading dialog box populated with values for trading as recited in the claims of the '611 Patent, this limitation is found specifically in Kirwin. Pet. 41. (citing Ex. 1018, 8:7–10, 10:9–14, 10:20–11:21, 14:14–44, 2013–28; Ex. 1002, Donefer Decl. ¶¶ 58–60). Petitioner cites the trading dialog box of Kirwin as being almost identical to the interactive trading dialog box of the '611 Patent. *Id.* Patent Owner argues that “[w]hile Kirwin mentions that a trader may click on a bid or offer (101) to cause a price to appear in a price entry field (224) . . . that bid or offer appears in a market cell (100) which is *not* a ‘graph having a first axis and a second axis’ that includes a ‘curve corresponding to a range of values of a financial instrument’ as claimed. PO Resp. 66. According to Patent Owner, the

market cell (100) of Kirwin does not enable traders to determine market trends more easily and is just a black box. *Id.* at 65.

Figure 2 of Kirwin discloses a graphical trading interface with dialog window 200 that may be opened automatically or manually before, during, or after a trade. Ex. 1018, 8:1–16. Kirwin also discloses using a data entry window to select items to be traded via dialog window 200. *Id.* at 22: 21–22. Figure 8 of Kirwin illustrates one such data entry window (a Bond Analysis window that is part of the Reuters 3000 Xtra product) that may be used to select items to be traded using the dialog window of Figure 2. *Id.* at 5:21–23, 8:25–29. The lower right corner of the graphical interface shown in Figure 8 of Kirwin includes a continuous curve along a first axis displaying bond term and a second axis displaying bond yield. “By clicking on any of the bonds 804–816, a trader can cause a bid order command to be submitted via dialog window 200.” *Id.* at 22:31–33. Kirwin’s dialog window 200 has buttons and entry fields, such that a trader may submit a bid command, an offer command, a buy command, or a sell command. *Id.* at 8:1–16. In addition, in Kirwin the Figure 8 data entry window used to select the item to be traded “may be any window for displaying data on tradeable items. For example, . . . a market data display, a web page including financial data or auction information , a spread sheet, etc.” *Id.* at 22:21–25. Thus, contrary to Patent Owner’s arguments, Kirwin discloses responding to a user’s selection of a tradeable item on any suitable form of display by popping up a dialog window that allows a user to place a bid or make an offer. Thus, we are persuaded that Kirwin discloses the claimed trading dialog box.

Motivation to Combine

Petitioner contends that Friesen discloses all the elements of claim 1 and cites Jones and Kirwin to the extent that Friesen is found not to disclose the selection and interactive trading dialog box elements. As discussed above, we are persuaded that Petitioner has demonstrated Friesen discloses all of the elements of claim 1, Jones discloses the selecting limitation, and Kirwin discloses the claimed interactive trading dialog box. We turn to the parties' arguments concerning motivation to combine the teachings of the references.

According to Petitioner, a person of ordinary skill would have been motivated to combine Friesen, Jones, and Kirwin to achieve the interactive trading system claimed in the '611 Patent. Pet. 66–69. Petitioner notes that Friesen, Jones, and Kirwin are all directed to an electronic trading interface in which trades are initiated by touching or clicking an interface element. *Id.* at 67. Mr. Donefer testifies that a person of ordinary skill would have recognized there are a limited number of ways to interact with a graph on a computer display and a person of ordinary skill would have understood that clicking on a graph, as in Jones, is an alternative to the drag and drop approach in Friesen that would have allowed a user to place trades more efficiently. *Id.* at 67 (citing Ex. 1002, Donefer Decl. ¶ 61). Explaining that dialog boxes were used widely at the time, Mr. Donefer also testifies that modifying Friesen's dialog box to include to receive instructions for bids, offers, hits, and lifts would have been a logical modification, particularly when combined with Jones, because it would have given the user greater control over the transaction selection via a streamlined interface. *Id.* at 68 (citing Ex. 1002, Donefer Decl. ¶ 62). According to Petitioner, one of

ordinary skill would have recognized the value of including GUI features that would improve the speed, accuracy, and efficiency of executing trades and the combination of the references is a combination of familiar elements according to known methods. *Id.* at 68–69.

Patent Owner contends that a person of ordinary skill would not have been motivated to combine Friesen and Jones. PO Resp. 60–63. Patent Owner argues that Friesen and Jones are different from the invention recited in claim 1 because they both identify the transaction before clicking the graph—in Friesen the transaction is preselected based on token selection, and in Jones the transaction type is preselected from the dialog box display by selecting the buy or sell command box before the point on the graph. *Id.* at 61–62. Patent Owner states that modifying Friesen with Jones would wholly eliminate Friesen’s drag and drop feature (*id.* at 62), and at the same time argues that Friesen and Jones do not present a design choice between suitable alternatives (*id.* at 60–61). According to Patent Owner, modifying Friesen with Jones to initiate a transaction simply by a click does not disclose an interactive graph that a user selects to initiate a transaction. *Id.* at 62.

Jones explicitly states, however, that (i) a trader can “initiate an order merely by touching a screen on a graph,” (ii) “the price at which the screen is touched, when combined with the order to buy or sell, establishes the particular type of order being placed,” and (iii) “[t]he order of the touch is not critical, other than when previewing or executing the order. The screen can be touched first to select a price, following which the quantity can be touched to complete the input step.” Ex. 1017 ¶¶ 34, 57–58. Although the text in paragraphs 57 and 58 of Jones does not state explicitly that the buy or

sell command can be entered after touching the graph to select a price, in the context of the disclosure in paragraph 34 that a trader “can initiate an order merely by touching the screen at a point of the graph” and recognizing that no action is taken until the “execute box” in Figure 5D is touched, we are persuaded that one of ordinary skill would have recognized that in Jones, by touching the graph, one could select a portion of the graph to initiate the transaction and subsequently touch the dialog box to identify the type of transaction at any time before touching the execute button. For this reason, we agree with Petitioner that a person of ordinary skill would have recognized Jones could be used with Friesen and been motivated to combine the teachings of these references.

Petitioner contends that it would have been obvious to one of ordinary skill to combine the teachings of Friesen and Jones with those of Kirwin because Friesen and Kirwin both disclose dialog boxes that are displayed in response to user selection of an interface element and are populated with values based on the selection. Pet. 67–68. Mr. Donefer testified that dialog boxes were used widely and that modifying Friesen’s dialog box would have been a natural step combining familiar elements according to known methods to give a user greater choice and control over a transaction. *Id.* at 68 (citing Ex. 1002 ¶ 62).

Patent Owner first disputes Mr. Donefer’s ability to provide credible testimony on the technical difficulties in such a combination. PO Resp. 63–64. We addressed Mr. Donefer’s qualifications previously in this Decision. In addition, we do not consider his statements concerning the combination of the references to require a high level of technical analysis.

Although the Petition addresses the motivation to combine as discussed above, Patent Owner next argues that Petitioner fails to explain why the alleged addition of Kirwin would be logical or would motivate a person of ordinary skill to make the addition. *Id.* at 64–65. Referencing Kirwin’s market cell 100, Patent Owner maintains that because Kirwin does not disclose the claimed “graph” a person of ordinary skill would not look to Kirwin to modify Friesen’s graph. *Id.* at 65–66, 67–68. We addressed this issue above, noting Kirwin’s description of Figure 8, which includes a graph, teaches that using any suitable display, for example by clicking on a particular bond in Figure 8, one can bring up dialog window 200 that includes bid and offer instructions.

Petitioner cites Friesen for its disclosure that selecting a portion of the graph, e.g. by dragging a dropping a token to a position on the graph, brings up a dialog box to perform a financial transaction. Petitioner cites Kirwin for the proposition that trading dialog boxes that allow the user to select bid and offer transactions were known in the art. As discussed above, Kirwin itself, in its discussion of Figure 8, discloses that clicking on the initial display brings up a dialog box with bid and offer options. Jones discloses that one can touch the graph to initiate a financial transaction. As Petitioner notes, the disclosure in these references concern trading financial instruments and the use of dialog boxes displayed in response to user selection of an interface element, where the trading dialog boxes are populated with values based on the selection. *Pet.* 67–68. Therefore, we are persuaded that Petitioner has shown that a person of ordinary skill would have been motivated to combine the teachings of Friesen, Jones and Kirwin to arrive at the invention recited in claim 1.

Independent Claim 12

Independent claim 12 is an apparatus claim reciting a processor with a program causing a computer of an electronic trading system to carry out substantially the same steps as those recited in method claim 1. Patent Owner does not offer any arguments other than those it offered with respect to claim 1. For the same reasons as those discussed above with respect to claim 1, we are persuaded that Petitioner has demonstrated that the combination of the references teaches the limitations of claim 12 and that a person of ordinary skill would have been motivated to combine the references.

Dependent Claims 2 and 13

Dependent claims 2 and 13 recite that “the trading dialog box is automatically populated with a maturity date.” Petitioner cites Friesen as disclosing that values for a traded asset “may represent price, interest rate, or any other metric by which an item may be valued,” and that “the value scales are completely customizable.” Pet. 55 (citing Ex. 1016 at 10:13-4, 12:11-19, 12:28–30). Petitioner also notes that FIG. 8 of Kirwin (annotated version shown here) illustrates that fixed income instruments such as bonds can be compared against each other according to their maturity date. See Ex. 1018 at FIG. 8; Ex. 1002 ¶ 84. Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen and Kirwin both disclose the limitation recited in claims 2 and 13 and that a person of ordinary skill would have been motivated to combine the references.

Dependent Claims 3 and 14

Dependent claim 3 and 14 recite that “the trading box is automatically populated with a price.” Petitioner cites Figures 3D and 3E of Friesen illustrating pop-up trading windows that are automatically populated with the price of a bid or offer order when a user selects an outstanding offer or bid. Pet. 56. Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen discloses the limitation recited in claims 3 and 14 and that a person of ordinary skill would have been motivated to combine the references.

Claims 4 and 15

Claim 4 and 15 recite that “the trading dialog box is automatically populated with a yield.” Petitioner notes that Friesen discloses that the values scales are customizable and that Kirwin includes a graph explicitly showing the fixed income securities can be compared against each other according to their yield. *Id.* at 57–58. Kirwin describes the comparison of bonds based on yield, provides a two-axis graph comparing such bonds, and discloses automatically populating a dialog window with the values of a selected bid or offer related to a bond. *Id.* at 58 (citing Ex. 1002 ¶ 92). Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen and Kirwin disclose the limitation recited in claims 4 and 15 and that a person of ordinary skill would have been motivated to combine the references.

Claims 5 and 16

Claims 5 and 16 recite that “the curve is a fair value curve.” We have construed “fair value curve” to mean “a plot of data points representing market value against another parameter.” Petitioner cites Friesen’s disclosure of an “action line” indicating “a value that the trader has determined is appropriate to take action, i.e., buy or sell,” as disclosing the claimed fair value curve. *Id.* at 58–59 (citing Ex. 1016, 6:1–3). Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen discloses the limitation recited in claims 5 and 16 and that a person of ordinary skill would have been motivated to combine the references.

Claims 6 and 17

Claim 6, which depends from claim 1, further recites “allowing the user to select a portion of the graph further comprises allowing the user to select a portion of the curve.” Claim 17, which depends from claim 12, similarly recites that “the program is configured to allow the user to select a portion of the curve.” Petitioner cites Friesen’s disclosure of dragging a token over the curve and Jones’ disclosure of selecting a curve of stock process by touching a given point of the plot. *Id.* at 59–60. Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen discloses the limitation recited in claims 6 and 17 and that a person of ordinary skill would have been motivated to combine the references.

Claims 7 and 18

Claims 7 and 18 recite; “the graph includes: a plurality of first symbols, wherein each first symbol of the plurality of first symbols

corresponds to a bid for a particular financial instrument; and a plurality of second symbols, wherein each second symbol of the plurality of second symbols corresponds to an offer for a particular financial instrument.”

Petitioner cites Friesen as disclosing different icons (first and second symbols) for bid and offer orders. Pet. 60–61. Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen discloses the limitation recited in claims 7 and 18 and that a person of ordinary skill would have been motivated to combine the references.

Claims 8 and 19

Claim depends from claim 7 and recites “allowing the user to select a portion of the graph further comprises allowing the user to select a first symbol.” Claim 19 depends from claim 18 and recites “the program’s allowing the user to select a portion of the graph further comprises allowing the user to select a first symbol.” Petitioner argues that the combination of Friesen, Jones, and Kirwin discloses allowing a user to select a portion of a graph by selecting a first symbol, wherein the first symbol corresponds to a bid for a financial instrument. Pet. 61 (citing Ex. 1002, Donefer Decl, ¶ 104). Petitioner also notes that Friesen discloses “drag[ging] an offer token 416 to the location directly over any bid token,” thereby selecting that bid for trading. *Id.* (citing Ex. 1016 at 15:32-16:2, FIG. 4; *see also id.* at 10:20-26, 13:17-18, 31:10-12; Ex. 1002, Donefer Decl. ¶¶ 105-106). Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen discloses the limitation recited in claims 8 and 19 and that a person of ordinary skill would have been motivated to combine the references.

Claims 9 and 20

Claim 9 depends from claim 7 and recites that “the trading dialog box is populated with information relating to a bid corresponding to the selected first symbol.” Claim 20 depends from claim 18 and recites that “the program is configured to populate the trading dialog box with information relating to a bid corresponding to the selected first symbol.” Petitioner argues that the combination of Friesen, Jones, and Kirwin discloses in response to selecting a bid symbol displaying a trading dialog box including information relating to the selected bid symbol. Pet. 62 (citing Ex. 1002, Donefer Decl. ¶ 108). Petitioner also notes that Friesen discloses that upon selecting a bid token, “a window pops up displaying an offer order with value and quantity equal to that of the bid token.” Id. (citing Ex. 1016 at 15:32-16:2, FIG. 3E, 4; Ex. 1002, Donefer Decl. ¶¶ 109-110). Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen discloses the limitation recited in claims 9 and 20 and that a person of ordinary skill would have been motivated to combine the references.

Claims 10 and 21

Claim 10, which depends from claim 7, recites “allowing the user to select a portion of the graph further comprises allowing the user to select both a first symbol and a second symbol.” Claim 21, which depends from claim 18, recites that “the program is configured to allow the user to select a portion of the graph and allow the user to select both a first symbol and a second symbol.” Petitioner cites Friesen’s disclosure of dragging a bid or offer token to open up either a purchase or sell window as teaching the ability to select both a first symbol and a second symbol on a graph.

Pet. 62–63. Petitioner also cites Jones as disclosing the screen can be touched repeatedly at multiple points on a graph to initiate multiple transactions. *Id.* Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen and Jones disclose the limitation recited in claims 10 and 21 and that a person of ordinary skill would have been motivated to combine the references.

Claims 11 and 22

Claims 11 and 22, which depend from claims 7 and 18, respectively, further recite that “the trading dialog box includes information relating to a bid corresponding to the selected first symbol and an offer corresponding to the selected second symbol.” Petitioner cites Friesen’s disclosure of dragging a bid or offer token to open up either a purchase or sell window as teaching the ability to select both a first symbol and a second symbol on a graph. Pet. 64. Petitioner also cites Figure 2 of Kirwin as disclosing a trading dialog window having the ability to issue instructions for multiple bids, offer, hits, and lifts. *Id.* at 64–65 (citing Ex. 1018, 9:15–17, 8:31–9:7). Patent Owner does not respond to Petitioner’s contentions. In consideration of the above, we are persuaded that Petitioner has demonstrated that Friesen and Jones disclose the limitation recited in claims 11 and 22 and that a person of ordinary skill would have been motivated to combine the references.

Objective Considerations of Non-Obviousness

A conclusion as to obviousness is not complete without a consideration of objective considerations, which constitute independent evidence of non-obviousness. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372,

1378 (Fed. Cir. 2012). Patent Owner argues that objective considerations support a finding of non-obvious for two reasons: (i) the commercial success of Petitioner's products, and (ii) industry praise as demonstrated by Petitioner's advertising the ability of its products to enable trading directly from a graph. PO Resp. 2, 69–73.

Patent Owner contends that Petitioner makes, sells, distributes, and advertises products that embody one or more claims of the '611 Patent. PO Resp. 2, 71. In support of its contention, Patent Owner relies upon the testimony of Mr. Molokhia. *Id.* The Patent Owner Response cites the Declaration of Mr. Molokhia for the proposition that various of Petitioner's products, such as Response CQG Integrated Client and Q-Trader have features such as "Snap-Trader" that allow a user to execute trades directly from a graph containing a curve corresponding to a range of values of a financial instrument, as recited in claim 1 of the '611 Patent. *Id.* (citing Ex. 2027, Molokhia Resp. Decl. ¶ 115). The Patent Owner Response makes similar arguments concerning Petitioner's "Chart Trader" and "TradeStation 9.3 or 9.5 Platform. *Id.* Although Patent Owner cites to the Molokhia Response Declaration, the Patent Owner Response itself includes no analysis or argument to support its bare allegations. Patent Owner's citation to the Molokhia Response Declaration without any analysis or discussion in the Patent Owner Response is an improper incorporation by reference. 37 C.F.R. § 42.6(a)(3).

Even considering the Molokhia Response Declaration, relevant paragraphs 115–119 provide no independent analysis of the claim limitations of the '611 Patent. Instead Mr. Molokhia shows a screen capture of a chart alleged to be from one of Petitioner's products, asserts that the

corresponding product allows a user to execute a trade directly from the graph, and opines that the product practices every limitation of at least claim 1 stating “for example” that the feature allows the user to select a portion of the graph and in response to the user’s selection, displays an interactive trading dialog box configured to receive an instruction from a user.

Ex. 2027, Molokhia Resp. Decl. ¶¶115–118. For each product, Mr.

Molokhia also cites infringement contentions filed by Patent Owner’s counsel in corresponding litigation. *Id.* (citing Exs. 2030–2033).

Mr. Molokhia’s reference to the infringement contentions further compounds Patent Owner’s inappropriate incorporation by reference. In any event, Mr. Molokhia’s reliance upon counsel’s infringement contentions is no substitute for a detailed analysis in the Patent Owner Response in this proceeding. Mr. Molokhia acknowledged that he did not participate in preparing Patent Owner’s infringement contentions and we do not credit his testimony citing Exhibits 2030–2033. *See* Ex. 1024 10:5–21, 144:5-9; 157:21–158:2, 163:14–20).

We further note that the Patent Owner Response cites no other evidence of commercial success of Petitioner’s products. Patent Owner provides no evidence concerning the size of the market, Petitioner’s sales revenue, or Petitioner’s market share. On this record, we are not persuaded that Patent Owner’s evidence regarding commercial success amounts to probative evidence of non-obviousness. .

Patent Owner also argues that objective considerations support a conclusion of non-obviousness because by touting the ability to trade directly from a chart using its products, Petitioner praises the features recited in claim 1. PO Resp. 2, 72–73. This argument also is not persuasive. To

the extent Petitioner's promotional literature touts achieving the goal of trading directly from a chart, that literature reflects a functional goal of the product consistent with the prior art. For example, Jones discloses that

a trader can visually see the progress of prices in a financial market, initiate an order merely by touching the screen at a point on the graph, review multiple order in multiple markets on each chart screen, and then close the trades or make a second trade by buying or selling at a later time, again by simply touching the screen at a given price.

Ex. 1017 ¶ 34. Patent Owner provides no evidence of industry praise for the invention claimed in the '611 Patent.

Patent Owner's arguments that touting the ability to make a trade directly from a graph is praise for the invention also contradict arguments Patent Owner advanced that the claims recite patent-eligible subject matter under 35 U.S.C. § 101. On that issue Patent Owner contends that the "scope and novelty of the claims does not lie in the broad concept of 'chart based trading.'" PO Resp. 40. Instead, Patent Owner argues that the claims of the '611 Patent are directed to providing a *specific* graphical representation of a market where an "*interactive* trading dialog box," preformatted with information corresponding to a user's selection of the graph allows the user to enter an order via the graphical user interface, making the graph *itself* interactive. *Id.* The advertising cited by Patent Owner touts chart based trading. Thus, we are not persuaded that by advertising the ability to make a trade directly from a chart Petitioner praises the invention Patent Owner argues is claimed in the '611 Patent.

Summary

Based on the evidence and arguments of record discussed above, we are persuaded that Petitioner has demonstrated that a person of ordinary skill

in the art would have been motivated to combine the teachings of Friesen, Jones and Kirwin and that these references disclose all of the limitations of claims 1–22. Therefore, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claims 1–22 are unpatentable as obvious over the combination of Friesen, Jones and Kirwin.

PETITIONER’S MOTION TO EXCLUDE

Petitioner moves to exclude Exhibits 2030–2033 (Patent Owner’s infringement contentions in corresponding district court litigation) on the basis that they are inadmissible hearsay and are irrelevant. Mot. to Exclude 1–12. With respect to this proceeding, Exhibits 2030–2033 are out of court statements offered by Mr. Molokhia, who did not participate in preparing Patent Owner’s infringement contentions and has no knowledge upon which the statements can be cross examined. In support of Patent Owner’s commercial success arguments the statements also are offered to prove the truth of the matter asserted, i.e., that Petitioner’s products incorporate all the features recited in at least claim 1 of the ’190 Patent. Ex. 2027, Molokhia Resp. Decl. ¶¶ 115–119. Thus, the infringement contentions are inadmissible hearsay.

We also are not persuaded the Exhibits 2030–2033 qualify under the exceptions in Fed. R. Evid. 703, which provides that if in forming an opinion an expert relies on facts or data that experts in the field would reasonably rely on, those facts or data need not be admissible for the opinion to be admitted. However to the extent the facts or data are inadmissible, they may be disclosed to a jury only if their probative value in helping the jury to evaluate the opinion substantially outweighs the prejudicial effect. Fed. R. Evid. 703. The extent to which Mr. Molokhia relies upon Exhibits 2030–

2033 is unclear (Ex. 2027, Molokhia Resp. Decl. ¶¶115–118) and it is impossible to determine how they are probative because Mr. Molokhia does not discuss them. Although Patent Owner criticizes Petitioner for using its Motion to Exclude to argue substantive issue (Opp. to Mot. to Exclude 8–10), Patent Owner uses its opposition to argue that Mr. Molokhia considered examples of products shown in the exhibits and determined through independent research that features of the products practice the claims (*id.* at 12). However, nothing in the Patent Owner Response or Mr. Molokhia’s Response Declaration describes such independent research of how Mr. Molokhia arrived at his opinion.

As discussed above, the Patent Owner Response and Mr. Molokhia’s opinion are deficient on the issue of commercial success because they provide virtually no analysis of Petitioner’s products relative to the claims at issue. Having not relied on Mr. Molokhia’s testimony, we do not rely upon Exhibits 2030–2033 in this proceeding. Therefore, we dismiss Petitioner’s motion as moot.

We reach a similar conclusion with respect to Exhibits 2038–2048. As discussed above, Patent Owner’s allegations that Petitioner’s promotional materials tout making trades directly from a graph do not constitute praise for the invention in the ’611 Patent, as that feature is disclosed at least in Jones. For that reason, we do not rely upon Exhibits 2038–2048 in determining that Patent Owner has not shown that objective considerations of industry praise are persuasive evidence of non-obviousness. Having not relied upon Exhibits 2038–2048 in this Decision, we dismiss Petitioner’s Motion to Exclude these exhibits as moot.

PATENT OWNER'S MOTION TO AMEND

Introduction and Illustrative Substitute Claim

Patent Owner moves to cancel claims 1–22 and substitute new corresponding claims 23–44. Proposed substitute independent claim 23 is an independent method claim drawn to a method for providing a graphical user interface for accepting an order for a financial instrument. Proposed substitute claim 34 is an independent apparatus claim. Substitute claim 34 recites an apparatus for providing a graphical user interface for accepting an order for a financial instrument comprising a processor with a program to cause a computer to execute the same steps as those recited in method claim 23. Thus, substitute method claim 23, which we reproduce below showing how it has been amended from issued claim 1 of the '611 Patent is illustrative:

23. A method for providing a graphical user interface for accepting an order for a financial instrument, the method comprising the sequential steps of:
on a display terminal of a workstation of an electronic trading system, displaying an interactive graphical representation of a market, including a selectable, interactive graph having a first axis and a second axis, wherein the graph includes a curve corresponding to a range of values of a financial instrument;
allowing a user to select a portion of the graph to initiate an order command for the financial instrument; and
in response to the user selection of the portion of the graph, displaying an interactive trading dialog box on the display terminal of the workstation, the dialog box including a selectable buy button and a selectable sell button for designating a type of order command, the dialog box being automatically populated with values for trading, the values based on the values of the selected portion of the graph;

subsequent to the selection of the portion of the graph,
detecting a selection of one of the selectable buy button
or the selectable sell button; and
routing an instruction to an electronic trading system to
place the order with the electronic trading system, the
routed instruction being based on the detected selection
of the selectable buy button or the selectable sell button.

Construction of Substitute Claim

Patent Owner proposes constructions for the terms “an interactive graphical representation of a market” (Mot. to Amend 7–8) and “interactive trading dialog box” (Mot. to Amend 8–9). Petitioner does not propose any claim constructions or address Patent Owner’s proposed constructions.

An Interactive Graphical Representation of a Market

Patent Owner proposes that we construe “an interactive graphical representation of a market” to mean “graphical representation of current market activity that allows a user to place a trade directly from the graphical representation.” Mot. to Amend 7–8. Petitioner argues that Patent Owner’s construction is an improper attempt to read into the claims subject matter that has no written description support in the specification under 35 U.S.C. § 112. Opp. to Mot. to Amend 1–3. Petitioner further argues that Patent Owner uses this unsupported construction as the basis for patentability arguments distinguishing the references as initiating a trade from off the graph. *Id.* at 2.

As a continuation of U.S. Patent 7,113,190 B2 (“the ’190 patent), the ’611 Patent and the ’190 Patent have the same specification. The ’190 Patent is the subject of a co-pending covered business method patent review involving the same parties, captioned *Interactive Brokers LLC, et al v. Chart Trading Development LLC* Case CBM2016-00038. In a Final

Written Decision in that case, we found the term in the preamble not be limiting, but for clarity we construed it, noting:

An “interactive graphical representation of a market” encompasses a broader spectrum of user interactions with the graph of the market than making trades. The provided graphical representation is a graph of a market. The graph is interactive because it is presented to the user in a form that the user can interact with it. Other features recited in the claim, e.g., allowing the user to select a portion of the graph, define the scope of that interaction. Thus, we construe “an interactive graphical representation of a market” to mean *a graph of a market presented to a user in such a form that the user can take actions using the graph.*

Interactive Brokers LLC, et al v. Chart Trading Development LLC, Case CBM2016-00038, slip op. at 7 (PTAB Aug. 18, 2017)(Final Written Decision). In the substitute claims, the term “interactive graphical representation of a market” appears as a claim limitation. Substitute claim 23 recites “on a display of a workstation of an electronic trading system, displaying an interactive graphical representation of a market, including a selectable, interactive graph having a first axis and a second axis.” The use of the “interactive graphical representation of a market” in a claim limitation does not change its meaning. A similar analysis applies to independent apparatus claim 34. Therefore, we apply the same construction in this proceeding as that applied in CBM2016-00038 and construe “an interactive graphical representation of a market” to mean *a graph of a market presented to a user in such a form that the user can take actions using the graph.*

Interactive Trading Dialog Box

Patent Owner proposes that we construe “interactive trading dialog box” to mean “a graphical user interface portion that appears as an overlay and enables an exchange of input and output between a user and a

computer.” Mot. to Amend. 8–9. This is the same construction Patent Owner proposed for and we applied to “trading dialog box.” PO Resp. 29. Thus, Patent Owner attributes no significance to the term “interactive.” In the co-pending covered business method patent review, we construed “interactive trading dialog box” to mean “an overlay on a displayed graph through which a user may exchange information with a computer.”

Interactive Brokers v. Chart Trading, CBM2016-00038, slip op. at 8 (PTAB Aug. 18, 2017).

Indefiniteness Under 35 U.S.C. § 112

To Initiate An Order Command

Proposed substitute claim 23 recites “allowing a user to select a portion of the graph to initiate an order command for the financial instrument.” A similar limitation appears in proposed substitute claim 34. Noting that Patent Owner has not proposed a construction for this new claim term and that the Specification does not use the terms “initiate” and “order command,” Petitioner contends that this limitation is indefinite under 35 U.S.C. § 112. Opp. to Mot. to Amend 3–5. Petitioner contends that the specification discloses only submitting trades from a trading dialog box, that the term cannot be interpreted to mean “initiating an order process” because a “command” and a “process” are not synonymous, and that the Specification does not delineate what actions bound “initiating an order command.” *Id.* at 4–5.

Patent Owner cites paragraph 46 of Application No. 10/306,996 (“the ’996 Application”) for the parent ’190 Patent as supporting this limitation. Mot. to Amend 4. Patent Owner states that paragraph 46 discloses an embodiment in which the user selects one of a hit 604, offer 602, or curve

506 on the graph and that the user's selection on the graph therefore initiates the order command. *Id.* (citing Ex. 1004, 351).

Paragraph 46 states “in an example in which the user desires to submit a hit or lift in response to a particular bid or offer, respectively, the user may select any portion of graph 500 . . . In response to the user's selection, the user may be presented with a trading dialog box overlay 700 as shown in Figure 7.” Ex. 1004, 351. This portion of the Specification discloses that a user may be presented with a trading dialog box, but does not state expressly that a user may initiate a trade either from the graph or from the trading dialog box. In the context of Figure 9, paragraph 55 of the '996 Application discloses that “[t]rading dialog box overlay 1000 may include a buy region 1002 and a sell region 1004 . . . To place the trades, the user may select buy button 1006 and sell button 1008.” *Id.* at 355. This disclosure is consistent with the view that the Specification discloses initiating a buy or sell transaction from the trading dialog box. Nevertheless prior to selecting the buy or sell button, the proposed substitute claim 23 recites “allowing the user to select a portion of the graph” for the purpose of initiating an order command. The usage of “allow” in this context implies that the user cannot initiate a transaction or a command to process a transaction until the system allows the user to select a portion of the graph.

The Specification of the '996 Application uses the term “trading command.” According to the Specification “[p]rocessor 202 uses the workstation program to present on display 204, for example, graphical trading interface information received through communication link 104 and trading commands and values transmitted by a trader at workstation 102.” Ex. 1004, 280, 343. The Specification also discloses that “[s]erver 110 may

include processor 20, display 222, input device 224 and memory 226 . . . for storing information relating to market conditions received through communications link 108 and or through other links, and also receives trading commands and values transmitted by one or more users.” *Id.* Patent Owner argues that Petitioner’s testifying expert, Mr. Donefer stated “trading command” or “command” means an instruction to an electronic trading system to perform a particular transaction— such as buy, sell, bid, offer, hit, or lift—and that those are *types* of “trading commands,” also referred to as “orders.” Reply to Opp. to Mot. to Amend 2–3 (citing Ex. 2052 83:14–84:20). In addition, the proposed substitute claim 23 further recites that the trading dialog box has a buy button and a sell button for designating a type of order command. As discussed above, the discussion of Figure 9 in the specification describes selecting one of the buy and sell buttons to place a trade. In addition, the discussion of Figure 2 refers to trading commands transmitted by a user at the workstation. See Ex. 1004, 355.

In consideration of the above, we determine that, for purposes of this proceeding, the term “to initiate an order command” requires no further construction and that, notwithstanding the absence of the term in the Specification, the disclosure in the ’996 Application is adequate under 35 U.S.C. § 112.

§101 Subject Matter Eligibility Of Substitute Claims

Earlier in this Decision, we determined that the claims of the issued ’611 Patent do not recite patent-eligible subject matter. Patent Owner argues eligibility of the proposed substitute claims under step 1 of the *Alice* test, stating they do not recite the abstract idea of looking at a chart on a computer (or paper) and making a trade, but recite a specific improvement in

computer capabilities, namely an improved graphical user interface that allows a trader to submit a trade directly on the graph via the GUI. Mot. to Amend 10–11. According to Patent Owner, “[t]his improved GUI and the recited sequential steps for placing an order are ‘necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of’ electronic trading.” *Id.* at 11 (citing *DDR Holdings*, 773 F.3d at 1256–57). Patent Owner argues that the graphical interface improves over conventional tabular presentations of trading data and read-only graphs because it facilitates analyzing market trends, identifying prices, and entering bids and offers. *Id.* at 11–12. According to Patent Owner, the novelty of the claimed invention lies not in the concept of “chart based trading” or information collection, display, and analysis, but in “providing a graphical representation of a market wherein the graph *itself* is a selectable, interactive ‘read-write’ trading interface.” *Id.* at 12. Summarizing the steps recited in substitute claim 23, including displaying a graph, allowing the user to select a portion of the graph, displaying an interactive trading dialog box to permit the user to designate an order command, and based on the selection routing an order to trade, Patent Owner argues that the graph itself is an interactive trading interface. *Id.* at 12–13. According to Patent Owner, this is not a situation in which general, all-purpose computer components are added post-hoc to a fundamental economic practice, but one in which the claims are directed to a specific implementation of a solution to a problem in the software arts. *Id.* at 13 (citing *Enfish*, 822 F.3d at 1339).

Noting the testimony of Patent Owner’s testifying expert that charting long has been fundamental to stock trading and it was well-known to include charting in electronic trading systems prior to the ’611 Patent, Petitioner

contends that the additional limitations in the substitute claims do not rise to the level of patent eligible subject matter. Opp. to Mot. to Amend 6–7.

Petitioner contends (i) that the substitute claims do not recite trading directly from a graph, but from a trading dialog box, (ii) that the substitute claims do not address a problem in the realm of electronic trading or software, but from a person’s ability to recognize patterns, and (iii) that the sequential steps are routine and conventional aspects of chart based trading. *Id.* at 8–9. Petitioner again cites Patent Owner’s testifying expert for the proposition that there is nothing novel about the way financial information is displayed in the claims of the ’611 Patent. *Id.* at 9 (citing Ex. 1024 66:10–13).

Petitioner further argues that even if the substitute claims are not pre-emptive, they are still unpatentable under the *Alice* test. *Id.* at 10–11 (citing *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) for the proposition that “Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot.”).

According to Petitioner, the substitute claims, like those drawn to displaying menus in *Ameranth*, are not directed to a specific improvement in the way computers operate. *Id.* at 11–12 (citing *Ameranth*, 842 F. 3d at 1240–41). Petitioner also cites *Affinity Labs of Tex. v. DIRECTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016) in which the Federal Circuit held claims directed to an abstract idea despite their recitation of components such as a graphical interface including a list of media resources. *Id.* at 12. Petitioner notes that the court found the use of a GUI “does not avoid the problem of abstractness” because it “is nothing but a functionally described display of information.” *Id.* (citing *Affinity*, 842 F.3d at 1256, 1263).

We have construed “interactive graphical representation of a market” to recognize that the term requires only that the user be able to take actions using the graph, as opposed to being able to make a trade. As noted earlier in this Decision, guided by *Enfish* in our analysis under Step 1 of the *Alice* test, we consider the claim as a whole, including the interactive trading dialog box limitation, that we construed to mean *an overlay on a displayed graph through which a user may exchange information with a computer* in which the box is automatically populated with values and which displays buy and sell selection buttons. We also consider the other limitations including, detecting the user’s selection and in response routing a corresponding instruction to place the order with an electronic trading system. Thus, our Step 1 *Alice* analysis continues to focus on whether the claims are directed to improved computer functionality. We are persuaded that they are not.

Patent Owner’s primary argument that the substitute claims are not directed to an abstract idea is that they facilitate trading directly from a graph displayed on a terminal. As previously discussed, in *Enfish*, the claims were directed to an improvement in how the computer worked, i.e., how the computer implemented a self-referential database. *Enfish*, 822 F.3d at 1335. Recently, in *Visual Memory, LLC v. Nvidia Corp.*, App. No. 2016-2254, slip op. (Fed. Cir. Aug. 15, 2017), the court found patent eligible (i.e., not abstract) claims drawn to a computer memory system connectable to a processor and having one or more programmable operational characteristics defined through configuration by the computer based on the type of processor, comprising a main memory and a cache connected to a bus and wherein a programmable operational characteristic of the system determines

a type of data stored by the cache. *Id.* Applying *Enfish*, and the reasoning in *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1347 (Fed. Cir. 2017), and asking whether the claims were directed to an improvement in computer functionality, the court noted that the claims were not abstract because they are directed to an improved memory system, and not the abstract idea of categorical data storage. *Id.* at 7–9.

As we noted earlier, in determining whether the claims at issue are directed to a judicial exception, such as an abstract idea, we determine whether the claims “focus on a specific means or method that improves relevant technology” or are “directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” *McRO*, 837 F.3d at 1312–14. The substitute claims recite little more than a generic computer responding to inputs in a generic manner to carry out a generic action. In the first instance, the computer responds to a selection made on graph to bring up a dialog box. In the second instance, the computer responds to the user’s selection of a transaction type to send an instruction to place a trade. This arrangement is much like the subject matter found ineligible in *Ameranth*, in which a user’s selection of one menu causes the computer to display a second menu. *Ameranth*, 842 F.3d at 1241. In the ’611 Patent, making the selection from the graph does not avoid abstract subject matter. In the ’611 Patent, the graph is conventional—the graph is unlike that in *Trading Technologies* where at least one axis, the common static price axis, based on a static price index, resulted in an improvement to graphical interface devices that have no pre-electronic trading analog. *Trading Technologies*, 675 F. App’x at 1004. In *Trading Technologies*, the court stated explicitly that the claim recited more than setting, displaying

and selecting data or information that is visible on the graphical user interface device. *Id.* The additional step in the substitute claims, i.e., routing an instruction to an electronic trading system to place a trade based on the transaction type selected by the user, is a generic recitation of a routine responsive action taken by a computer that does not add patent eligible subject matter.

In consideration of the above, we agree with Petitioner that the substitute claims are drawn to abstract subject matter under Step 1 of the *Alice* test.

Under Step 2 of the *Alice* test, we consider whether the particular elements of the claim, considered “both individually and ‘as an ordered combination,’” add enough to “‘transform the nature of the claim’ into a patent-eligible application.” *Alice Corp.*, 134 S. Ct. at 2355 (2014). Patent Owner argues that the claims are directed to a non-conventional and non-generic arrangement of elements, i.e., a specialized graphical trading interface and a specific sequence of steps that enable the trader to place a trade directly from the graph itself, making the graph its own trading interface. Mot. to Amend 14–15. According to Patent Owner, the proposed substitute claims are like those in *Bascom* and *DDR Holdings* because they recite a specific discrete implementation of trading with graphical user interfaces and are directed to a nonconventional trading interface. *Id.*

Petitioner argues (i) that Patent Owner does not explain what specific sequence of steps makes the graph its own trading interface, (ii) that selecting a price from a graph as a first step in an order process was well known and not transformative, (iii) that the electronic system in the ’611 Patent is described in terms of “any suitable” components or programming

for implementing the desired function (citing Ex. 1001, 3:49–5:27; Ex. 1024, Molokhia Tr. 37:7–11, 18–21 for the proposition that no specialized hardware and no specialized programming is required), and (iv) that the functions performed by the GUI and the computer components in the substitute claims are purely conventional. Opp. to Mot. to Amend 14–16.

Patent Owner responds that Petitioner’s opposition is based on a piecemeal analysis and fails to recognize that the substitute claims are akin to those in *Trading Technologies*, where the court explained that “a proposed new application or computer-implemented function is not simply the generalized use of a computer as a tool to conduct a known or obvious process, but instead is an improvement to the capability of the system as a whole.” Reply to Opp. to Mot. to Amend. 8–9 (citing *Trading Technologies*, slip op at 8.)

Patent Owner’s reliance on *Trading Technologies* is misplaced. Citing the “static price index,” both the Federal Circuit and the district court determined the claims in *Trading Technologies* were drawn to an inventive concept under step 2 of the *Alice* test. The representative claim recites a graphical user interface in which one axis is a “common static price axis.” *Trading Techs*, 675 Fed. App’x at 1003. The Federal Circuit agreed with the district court’s view that because of this feature the claims are not drawn to routine or conventional use of computers or the Internet. *Trading Techs.*, 675 Fed. App’x. at 1004.

Patent Owner does not cite any description in the ’611 Patent of a non-conventional implementation of the claimed graphical user interface. Patent Owner’s primary basis for arguing that the graphical user interface in the substitute claims is transformative is that it is used as a trading interface

from which a trader can place traces directly. In contrast to the claims in *Trading Technologies*, taken as a whole, the proposed substitute claims recite, in result-focused functional language, displaying information on a graph, in response to the user's selection of a portion of the graph, displaying a trading dialog box that displays information and allows the user to select a transaction type, and upon detecting the user's selection, routing a corresponding instruction. Given the absence of a description in the specification of technology underlying how the display is configured or how the instruction is routed, nothing in the claims, understood in light of the specification, requires anything other than off the shelf, conventional computer and display technology for gathering, sending, and presenting the desired information and performing routine computer tasks. Nothing in the patent suggests that the displays needed for the claimed purpose are not readily available. *See DDR Holdings*, 773 F.3d at 1257 (finding an inventive concept in modifying conventional mechanics behind a website display to produce a dual source integrated hybrid display).

As discussed above, independent substitute claim 34 is an apparatus claim reciting essentially the same elements as those in substitute method claim 23 and we apply the same reasoning. Neither party argues that any of dependent claims 24–33 or 35–44 recites patent eligible subject matter for any other reason. Therefore, we apply the same reasoning to all the dependent substitute claims.

In consideration of the above, we agree with Petitioner that all the proposed substitute claims are drawn to patent-ineligible subject matter under step 1 of the *Alice* and, as an ordered combination, the claim elements

do not transform the nature of the claims into a patent eligible application under step 2 of the *Alice* test.

Analysis of Patentability of Substitute Claims Over Prior Art

According to Patent Owner, prior to the '611 Patent, traders using tabular and spreadsheet based GUIs in electronic trading found it difficult to determine market trends and systems that had graphs were read-only and not interactive. Mot. to Amend 21–22. Patent Owner argues that none of the prior art, alone or taken together, suggests the combination of features in the proposed substitute claims. *Id.* at 23. Patent Owner contends that, among other things, the Federspeil reference, cited during prosecution of the '996 Application, fails to disclose allowing a user to select a portion of the graph to initiate an order command, and is similar to Jones because it merely displays information. *Id.* at 23–24. Patent Owner argues that the Tuck reference, also cited during prosecution of the '996 Application, has a dialog box that, like Friesen, uses a Buy or Sell confirmation and does not allow a user to designate a type of order because the buy or sell button was previously selected. *Id.* at 24–25.

Patent Owner also argues that the substitute claims are neither anticipated nor obvious alone or in combination over Friesen, Jones, and Kirwin. See Mot. to Amend. 16–19, 25–30. As to anticipation, Patent Owner argues that Friesen does not teach or suggest the recitation “allowing a user to select a portion of the graph to initiate an order command for the financial instrument” because nowhere does Friesen disclose, teach, or suggest that a user can select a portion of the graph before selecting the buy or offer token. *Id.* at 16.

Patent Owner argues that Jones does not disclose or suggest this limitation or the claimed sequence because in Jones the order command must occur before the user's selection of the graph. *Id.* at 18. Patent Owner also argues that Jones does not allow a user to trade directly from the graph because in Jones the graph is an informational read only graph (*id.* at 18–19 (citing Ex. 2026, Donefer Tr. 156:14–20)). Patent Owner's citation to this portion of Mr. Donefer's testimony does not mention his answer to the next question where he explains that Jones is connected to a trading system, that one can choose to execute an order, and that the order is sent to the broker who will then "route it to the appropriate exchange to complete the order." Ex. 2026, Donefer Tr. 156:21–157:10.

Patent Owner argues that Kirwin does not anticipate the proposed substitute claims because Kirwin's market cell 100 also does not teach allowing a user to select a portion of the graph to initiate an order command for the financial instrument. Mot. To Amend 20. Petitioner does not address Patent Owner's arguments concerning anticipation.

Patent Owner argues that the substitute claims are not obvious over the combination of Friesen, Jones, and Kirwin. Earlier in this Decision, we concluded that a person of ordinary skill would have been motivated to combine the teachings of Friesen, Jones, Kirwin. Thus, we focus our attention primarily on whether the combination of these references teaches the limitations of the proposed substitute claims.

Patent Owner contends it would not have been obvious to allow a user to select a portion of the graph to initiate an order command for the financial instrument, because Friesen teaches a user must select either a bid token or an offer token off the graph to establish the type of order to be subsequently

placed. *Id.* at 25. Thus, the user does not select a portion of the graph to initiate the order command. Earlier in this Decision in our analysis of claim 1 and Friesen, we found a similar argument advanced by Patent Owner to be unpersuasive. We stated that we do not see a significant difference between running a cursor over the graph to select a portion of the graph and running a token over a graph to a selected point on the graph, noting that neither a cursor nor the token is part of the graph itself. The additional language of the substitute claim “to initiate an order command for the financial instrument” does not change our analysis. We agree with Petitioner that in Friesen, the order process is initiated when the token is actually dropped onto the graph. Opp. to Mot. to Amend 20. Thus, we are persuaded that Friesen discloses the limitation in substitute claim 23 that recites “allowing a user to select a portion of the graph to initiate an order command for the financial instrument.”

Patent Owner further argues that Jones does not teach or suggest this element because in Jones the buy or sell buttons must be touched before touching the graph. Mot. to Amend 25–26. Patent Owner also argues that a person of ordinary skill would not have been motivated to combine Friesen and Jones because it would be confusing to modify Friesen’s dialog box so the user could initiate the order command after dropping the token on the graph. *Id.* at 26. Earlier in this Decision we were not persuaded by similar argument advanced by Patent Owner. We noted that Jones explicitly states that a trader can “initiate an order merely by touching the screen at a point on the graph” (Ex. 1017 ¶ 34) and “can simply touch the plot of moving stock prices at a desired position to indicate an order” (*id.* ¶ 39). We also found that, although the text in paragraphs 57 and 58 of Jones does not state

explicitly that the buy or sell command can be entered after touching the graph to select a price, in the context of the disclosure in paragraph 34 that a trader “can initiate an order merely by touching the screen at a point of the graph” and recognizing that no action is taken until the “execute box” in Figure 5D is touched, we are persuaded that one of ordinary skill would have recognized that in Jones, by touching the graph, one could select a portion of the graph to initiate the transaction and subsequently touch the dialog box to identify the type of transaction at any time before touching the execute button. Thus, we agree with Petitioner that Jones can be used with Friesen and that Jones also discloses the recitation in the substitute claim 23 of “allowing a user to select a portion of the graph to initiate an order command for the financial instrument.”

Patent Owner next argues that it would not have been obvious to provide an interactive trading dialog box that includes both selectable buy and sell button for designating a type of order command. Mot. to Amend 26–29. Patent Owner argues that Friesen discloses a confirmation window that includes an OK button to confirm an order command previously selected before generating the pop-up window. *Id.* at 27. Patent Owner contends that Jones does not teach this limitation because in Jones, no overlay dialog box is displayed in response to the user’s selection. *Id.* Patent Owner also argues that to the extent that Jones discloses a selectable button, it is not displayed in the sequential order in proposed substitute claims 23 and 34. *Id.*

Patent Owner acknowledges that Kirwin discloses a dialog box with buy and sell buttons, but contends it would not have been obvious to use Kirwin’s dialog box with Friesen’s pop-up window because Friesen

discloses first selecting the type of transaction using a bid or offer token. *Id.* at 28. Patent Owner also argues that there is no motivation to modify Friesen's dialog box in this way because Friesen requires that preselection of order type, before the user drops the token. *Id.* at 28–29.

Earlier in this decision, we addressed a similar argument advanced by Patent Owner in our analysis of claim 1. We noted that Figure 8 of Kirwin illustrates a data entry window (a Bond Analysis window that is part of the Reuters 3000 Xtra product) that may be used to select items to be traded using the dialog window of Figure 2. Ex. 1018, 5:21–23, 8:25–29. In Kirwin the Figure 8 data entry window used to select the item to be traded “may be any window for displaying data on tradeable items. For example, . . . a market data display, a web page including financial data or auction information, a spread sheet, etc.” *Id.* at 22:21–25. Kirwin discloses responding to a user's selection of a tradeable item on any suitable form of display by popping up a dialog window that allows a user to place a bid or make an offer. Jones and Friesen disclose a graph as a suitable form of display. Kirwin's dialog window 200 has buttons and entry fields, such that a trader may submit a bid command, an offer command, a buy command, or a sell command. *Id.* at 8:1–16. Thus, the combination of Friesen, Jones and Kirwin discloses the elements of substitute claim 23, including the sequence of steps recited in the claim.

Patent Owner also argues that the proposed substitute claims are not obvious based on objective considerations of commercial success because Petitioner sells, distributes, and advertises products that embody one or more of the substitute claims. Mot. to Amend. 29–30. Without providing a detailed analysis in its Motion to Amend, Patent Owner asserts that

Petitioner's products include an interactive graphical representation of a market, allow the user to select a portion of a selectable interactive graph, display the claimed interactive trading box, and execute the sequence of steps in proposed substitute claim 23. Earlier in this Decision in our analysis of claim 1 we did not find a similar argument advanced by Patent Owner persuasive. In addition, as we discussed earlier in this Decision, Patent Owner's reliance on the testimony of Mr. Molokhia without providing any analysis in its Motion is an improper incorporation by reference.

In the context of a Motion to Amend, the burden of proof is on the movant, i.e., the Patent Owner. In consideration of the above, we are not persuaded that Patent Owner has demonstrated that proposed substitute claim 23 is patentable over the combination of Friesen, Jones and Kirwin.

Proposed substitute claim 34 recites an apparatus for providing a graphical user interface for accepting an order for a financial instrument comprising a processor that executes sequential steps corresponding to those recited in proposed substitute method claim 23. For the same reasons we are not persuaded that proposed substitute claim 34 is patentable over the combination of Friesen, Jones, and Kirwin.

Patent Owner does not advance separate arguments for proposed substitute claims 24–33, which depend from proposed substitute method claim 23, or proposed substitute claim 35–44, which depend from proposed substitute apparatus claim 34. The subject matter of these claims corresponds to the subject matter of dependent method claims 2–11 and apparatus claims 13–22, respectively. We have addressed this subject matter previously in this Decision. Consistent with our analysis of claim 2–11 and

13–22, we conclude that substitute claims 24–33 and 35–44 do not recite patentably distinguished subject matter.

SUMMARY

In consideration of the above, we conclude that claims 1–22 recite subject matter that is ineligible for patent protection under 35 U.S.C. § 101 and are unpatentable as obvious under 35 U.S.C. § 103(a) over the combination of Friesen, Jones, and Kirwin.

We also conclude that substitute claims 23–44 proposed in Patent Owner’s Motion to Amend recite subject matter that is ineligible for patent protection under 35 U.S.C. § 101 and are unpatentable as obvious under 35 U.S.C. § 103(a) over the combination of Friesen, Jones, and Kirwin. Therefore, we deny Patent Owner’s Motion to Amend.

We also dismiss Petitioner’s Motion to Exclude as moot.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–22 are unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Amend is denied;

FURTHER ORDERED that Petitioner’s Motion to Exclude is dismissed as moot; and

FURTHER ORDERED, that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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