Certificate of Correction
NOV 16 2004

J1017 U.S. PTO
09/894637
06/27/01

ISSUE CLASSIFICATION	Class	Subclass
	705	37

PATENT NUMBER
6766304
6766304

U.S. **UTILITY** Patent Application

O.I.P.E. SCANNED	PATENT DATE
JUL 20 2004	

APPLICATION NO.	CONT/PRIOR	CLASS	SUBCLASS	ART UNIT	EXAMINER
09/894637	D	705		2164	Nusbaum

APPLICANTS
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Jens-Uwe Schluetter
Harris Brumfield

TITLE
Click based trading with intuitive grid display of market depth

PTO-2040
12/99

ISSUING CLASSIFICATION

ORIGINAL CLASS	ORIGINAL SUBCLASS	CROSS REFERENCE(S) CLASS	CROSS REFERENCE(S) SUBCLASS (ONE SUBCLASS PER BLOCK)					
705	37	705	36	35				

INTERNATIONAL CLASSIFICATION: G06F 17/60

☐ Continued on Issue Slip Inside File Jacket

☐ TERMINAL DISCLAIMER	DRAWINGS Sheets Drwg.	Figs. Drwg.	Print Fig.	CLAIMS ALLOWED Total Claims	Print Claim for O.G.
	6	6	3	40	1

☐ The term of this patent subsequent to _____ (date) has been disclaimed.

(Assistant Examiner) (Date)

NOTICE OF ALLOWANCE MAILED
2-10-04

☐ The term of this patent shall not extend beyond the expiration date of U.S Patent. No. _____

Rich Weisberger
RICHARD WEISBERGER
PRIMARY EXAMINER
A.U. 3624
(Primary Examiner) 9/4 (Date)

ISSUE FEE

Amount Due	Date Paid
#1330	

☐ The terminal ____months of this patent have been disclaimed.

(Legal Instruments Examiner) (Date)

ISSUE BATCH NUMBER

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09/894637
06/27/01

INITIALS [illegible]

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18.	Petition Granted	6/17/2004	59.		
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[redacted]

SEARCHED

Class	Sub.	Date	Exmr.
705	35 36 37	9/01	JR
345	814	3/03	JR

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
NNC	-	9-1	JR

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	Date	Exmr.
Dialog TradingTechnologies.com Eurex Exchange.com	9/01	JR
Dialog	3/03	JR
Westlaw Foreign Pat.	3/04	JR
PATSYSTEMS.COM	1/01	JR

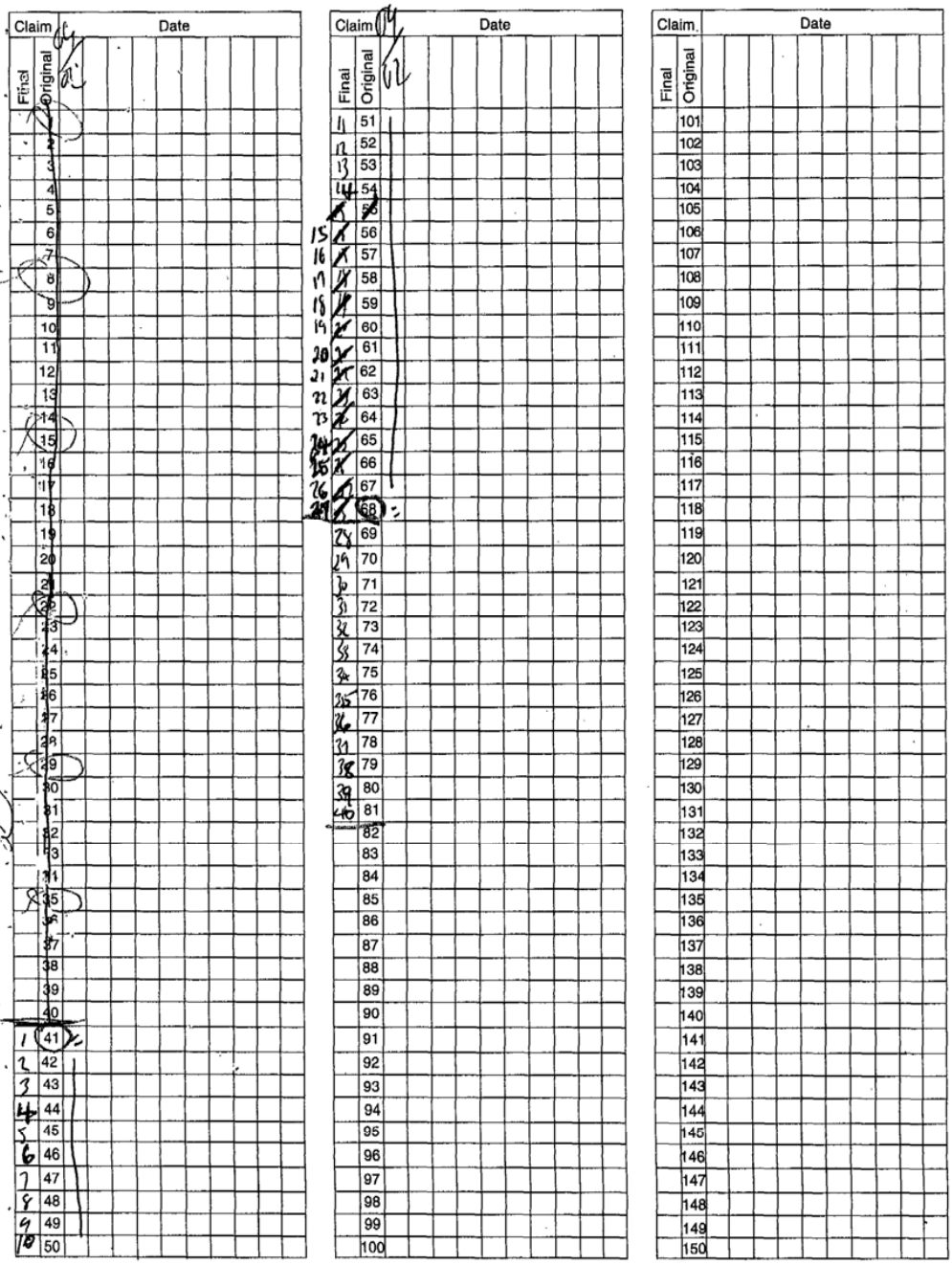
Coleen 7/26/11

ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	Bauerkhay		07-25-01
O.I.P.E. CLASSIFIER			
FORMALITY REVIEW	IA	D.C 8111	07/25/01
RESPONSE FORMALITY REVIEW	Tequest	925	10-15-01

INDEX OF CLAIMS

✔	Rejected	N	Non-elected
=	Allowed	I	Interference
—	(Through numeral)... Canceled	A	Appeal
÷	Restricted	O	Objected



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US006766304B2

(12) **United States Patent**
Kemp, II et al.

(10) **Patent No.: US 6,766,304 B2**
(45) **Date of Patent: Jul. 20, 2004**

(54) **CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH**

(75) Inventors: **Gary Allan Kemp, II**, Winnetka, IL (US); **Jens-Uwe Schluetter**, Evanston, IL (US); **Harris Brumfield**, Chicago, IL (US)

(73) Assignee: **Trading Technologies International, Inc.**, Chicago, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 544 days.

(21) Appl. No.: **09/894,637**

(22) Filed: **Jun. 27, 2001**

(65) **Prior Publication Data**

US 2002/0059129 A1 May 16, 2002

Related U.S. Application Data

(62) Division of application No. 09/590,692, filed on Jun. 9, 2000.
(60) Provisional application No. 60/186,322, filed on Mar. 2, 2000.

(51) **Int. Cl.**[7] **G06F 17/60**
(52) **U.S. Cl.** **705/37**; 705/36; 705/35
(58) **Field of Search** 705/35, 36, 37; 345/814

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Primary Examiner—Richard Weisberger
(74) *Attorney, Agent, or Firm*—Foley & Lardner

(57) **ABSTRACT**

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 that the trader will have orders filled at desirable prices and quantities. The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

40 Claims, 6 Drawing Sheets

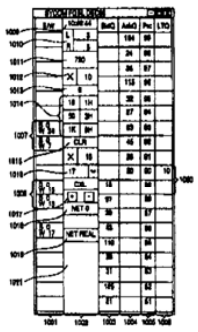

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FIG. 1

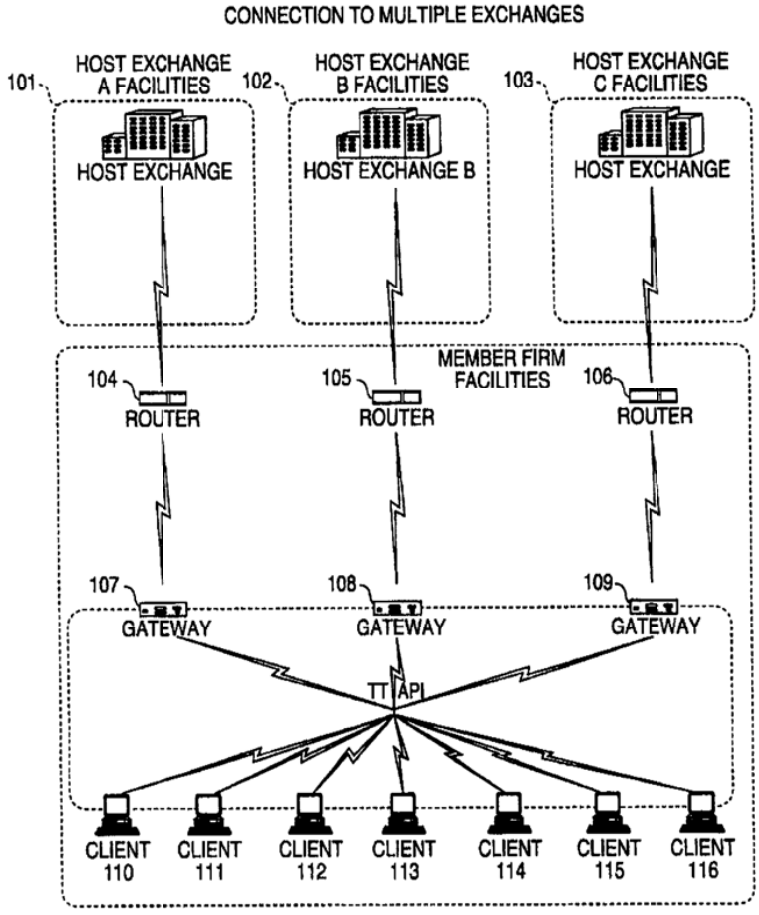

CONNECTION TO MULTIPLE EXCHANGES
HOST EXCHANGE A FACILITIES
101
HOST EXCHANGE B FACILITIES
102
HOST EXCHANGE C FACILITIES
103
HOST EXCHANGE
HOST EXCHANGE B
HOST EXCHANGE
MEMBER FIRM FACILITIES
104
ROUTER
105
ROUTER
106
ROUTER
107
GATEWAY
108
GATEWAY
109
GATEWAY
TT API
CLIENT 110
CLIENT 111
CLIENT 112
CLIENT 113
CLIENT 114
CLIENT 115
CLIENT 116

FIG. 2

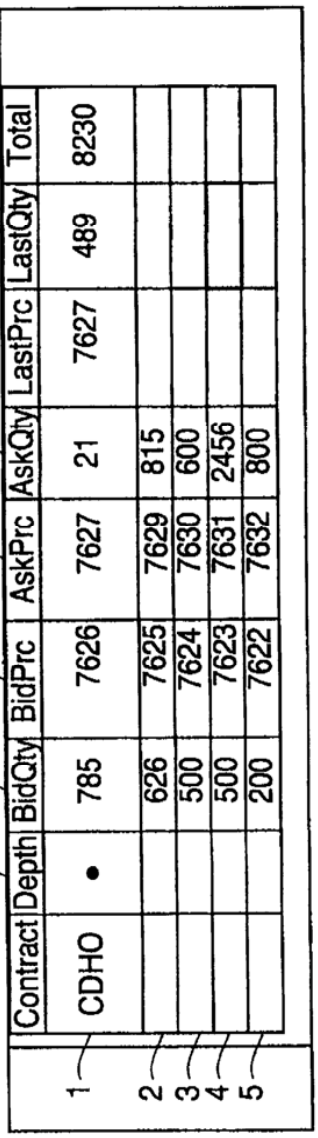
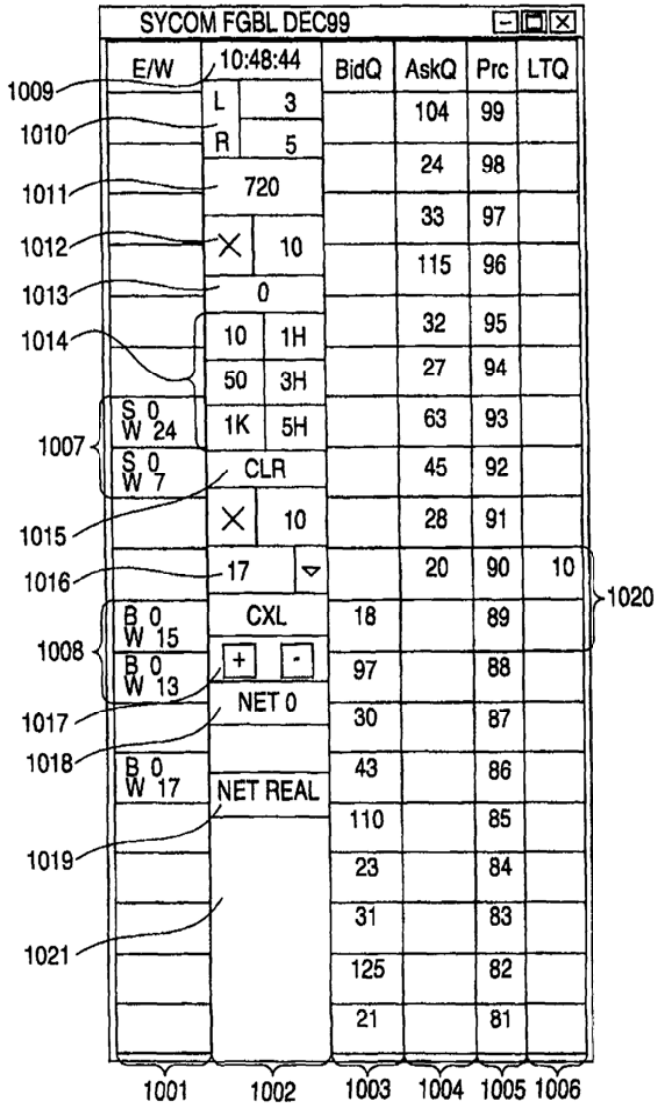

201
202
203
204
205
Contract
Depth
BidQty
BidPrc
AskPrc
AskQty
LastPrc
LastQty
Total
CDHO
•
785
7626
7627
21
7627
489
8230
626
7625
7629
815
500
7624
7630
600
500
7623
7631
2456
200
7622
7632
800
1
2
3
4
5

FIG. 3


SYCOM FGBL DEC99
E/W
10:48:44
BidQ
AskQ
Prc
LTQ
L 3
R 5
720
10
0
10 1H
50 3H
1K 5H
CLR
10
17
CXL
NET 0
NET REAL
S 0 W 24
S 0 W 7
B 0 W 15
B 0 W 13
B 0 W 17
104 99
24 98
33 97
115 96
32 95
27 94
63 93
45 92
28 91
20 90 10
18 89
97 88
30 87
43 86
110 85
23 84
31 83
125 82
21 81
1009
1010
1011
1012
1013
1014
1007
1015
1016
1008
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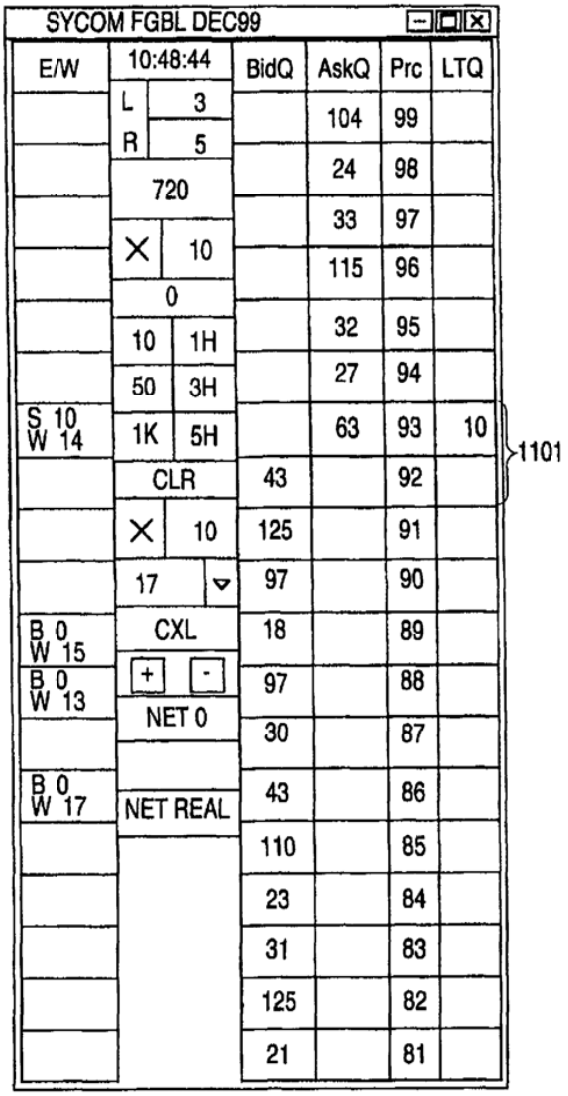
1019
1021
1020
1001
1002
1003
1004
1005
1006

FIG. 4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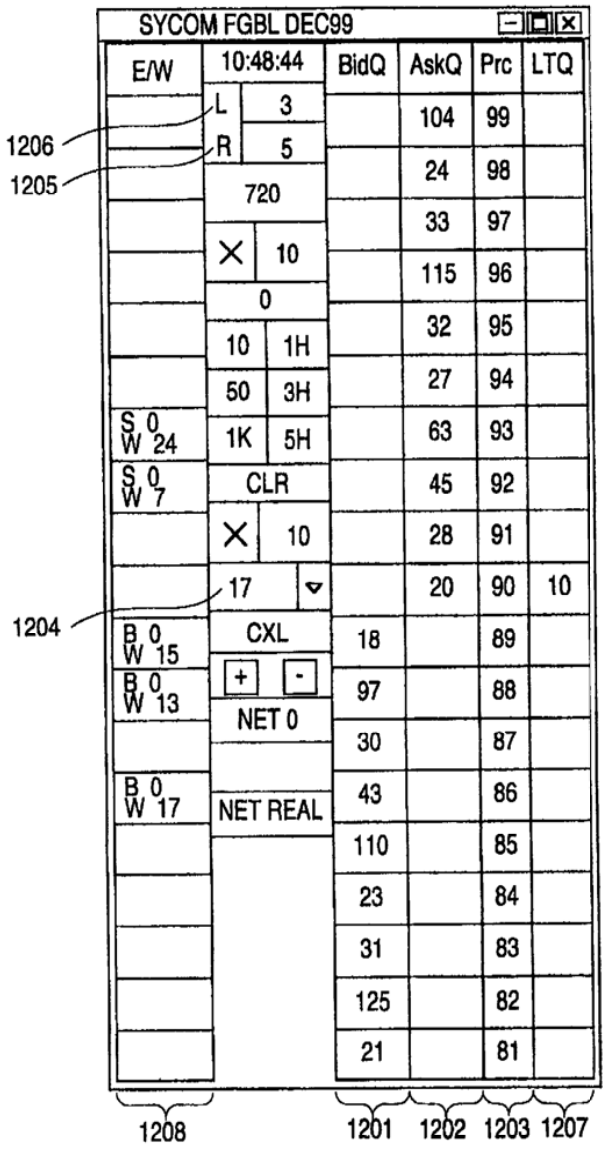
E/W
10:48:44
BidQ
AskQ
Prc
LTQ
L 3
R 5
720
10
0
10 1H
50 3H
S 10
W 14
1K 5H
CLR
10
17
B 0
W 15
CXL
B 0
W 13
NET 0
B 0
W 17
NET REAL
104 99
24 98
33 97
115 96
32 95
27 94
63 93 10
43 92
125 91
97 90
18 89
97 88
30 87
43 86
110 85
23 84
31 83
125 82
21 81
1101

FIG. 5


SYCOM FGBL DEC99
E/W
10:48:44
BidQ
AskQ
Prc
LTQ
L
3
R
5
720
10
0
10
1H
50
3H
1K
5H
CLR
10
17
CXL
+
-
NET 0
NET REAL
S 0 W 24
S 0 W 7
B 0 W 15
B 0 W 13
B 0 W 17
104 99
24 98
33 97
115 96
32 95
27 94
63 93
45 92
28 91
20 90 10
18 89
97 88
30 87
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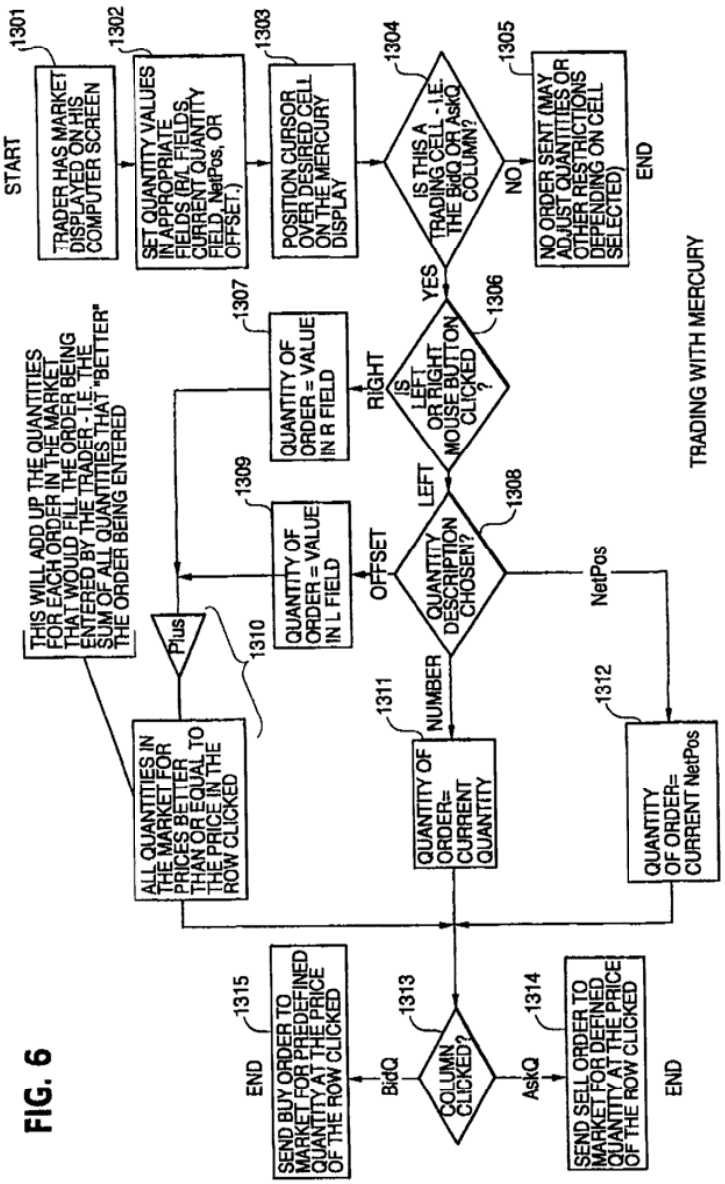
START
1301
TRADER HAS MARKET DISPLAYED ON HIS COMPUTER SCREEN
1302
SET QUANTITY VALUES IN APPROPRIATE FIELDS (R/L FIELDS, CURRENT QUANTITY FIELD, NetPos, OR OFFSET.)
1303
POSITION CURSOR OVER DESIRED CELL ON THE MERCURY DISPLAY
1304
IS THIS A TRADING CELL - I.E. THE BidQ OR AskQ COLUMN?
1305
NO ORDER SENT (MAY ADJUST QUANTITIES OR OTHER RESTRICTIONS DEPENDING ON CELL SELECTED)
END
YES
NO
1306
IS LEFT OR RIGHT MOUSE BUTTON CLICKED?
RIGHT
1307
QUANTITY OF ORDER = VALUE IN R FIELD
LEFT
1308
QUANTITY DESCRIPTION CHOSEN?
OFFSET
1309
QUANTITY OF ORDER = VALUE IN L FIELD
NetPos
NUMBER
1310
Plus
THIS WILL ADD UP THE QUANTITIES FOR EACH ORDER IN THE MARKET THAT WOULD FILL THE ORDER BEING ENTERED BY THE TRADER - I.E. THE SUM OF ALL QUANTITIES THAT "BETTER" THE ORDER BEING ENTERED
ALL QUANTITIES IN THE MARKET FOR PRICES BETTER THAN OR EQUAL TO THE PRICE IN THE ROW CLICKED
1311
QUANTITY OF ORDER= CURRENT QUANTITY
1312
QUANTITY OF ORDER= CURRENT NetPos
1313
COLUMN CLICKED?
BidQ
AskQ
1314
SEND SELL ORDER TO MARKET FOR DEFINED QUANTITY AT THE PRICE OF THE ROW CLICKED
1315
SEND BUY ORDER TO MARKET FOR PREDEFINED QUANTITY AT THE PRICE OF THE ROW CLICKED
END
END
TRADING WITH MERCURY

FIG. 6

CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

This application is a divisional application of Ser. No. 09/590,692 filed Jun. 09, 2000 which claims benefit of 60/186,322, filed Mar. 2, 2000.

PRIORITY

The present application claims priority to a U.S. Provisional Patent Application entitled "Market Depth Display Click Based Trading and Mercury Display" filed Mar. 2, 2000, the contents of which are incorporated herein by reference.

FIELD OF INVENTION

The present invention is directed to the electronic trading of commodities. Specifically, the invention provides a trader with a versatile and efficient tool for executing trades. It facilitates the display of and the rapid placement of trade orders within the market trading depth of a commodity, where a commodity includes anything that can be traded with quantities and/or prices.

BACKGROUND OF THE INVENTION

At least 60 exchanges throughout the world utilize electronic trading in varying degrees to trade stocks, bonds, futures, options and other products. These electronic exchanges are based on three components: mainframe computers (host), communications servers, and the exchange participants' computers (client). The host forms the electronic heart of the fully computerized electronic trading system. The system's operations cover order-matching, maintaining order books and positions, price information, and managing and updating the database for the online trading day as well as nightly batch runs. The host is also equipped with external interfaces that maintain uninterrupted online contact to quote vendors and other price information systems.

Traders can link to the host through three types of structures: high speed data lines, high speed communications servers and the Internet. High speed data lines establish direct connections between the client and the host. Another connection can be established by configuring high speed networks or communications servers at strategic access points worldwide in locations where traders physically are located. Data is transmitted in both directions between traders and exchanges via dedicated high speed communication lines. Most exchange participants install two lines between the exchange and the client site or between the communication server and the client site as a safety measure against potential failures. An exchange's internal computer system is Also often installed with backups as a redundant measure to secure system availability. The third connection utilizes the Internet. Here, the exchange and the traders communicate back and forth through high speed data lines, which are connected to the Internet. This allows traders to be located anywhere they can establish a connection to the Internet.

Irrespective of the way in which a connection is established, the exchange participants' computers allow traders to participate in the market. They use software that creates specialized interactive trading screens on the traders' desktops. The trading screens enable traders to enter and execute orders, obtain market quotes, and monitor positions. The range and quality of features available to traders on their screens varies according to the specific software application being run. The installation of open interfaces in the development of an exchange's electronic strategy means users can choose, depending on their trading style and internal requirements, the means by which they will access the exchange.

The world's stock, bond, futures and options exchanges have volatile products with prices that move rapidly. To profit in these markets, traders must be able to react quickly. A skilled trader with the quickest software, the fastest communications, and the most sophisticated analytics can significantly improve his own or his firm's bottom line. The slightest speed advantage can generate significant returns in a fast moving market. In today's securities markets, a trader lacking a technologically advanced interface is at 4 severe competitive disadvantage.

Irrespective of what interface a trader uses to enter orders in the market, each market supplies and requires the same information to and from every trader. The bids and asks in the market make up the market data and everyone logged on to trade can receive this information if the exchange provides it. Similarly, every exchange requires that certain information be included in each order. For example, traders must supply information like the name of the commodity, quantity, restrictions, price and multiple other variables. Without all of this information, the market will not accept the order. This input and output of information the same for every trader.

With these variables being constant, a competitive speed advantage must come from other aspects of the trading cycle. When analyzing the time it takes to place a trade order for a given commodity, various steps contribute in different amounts to the total time required. Approximately 8% of the total time it takes to enter an order elapses between the moment the host generates the price for the commodity and the moment the client receives the price. The time it takes for the client application to display the price to the trader amounts to approximately 4%. The time it takes for a trade order to be transmitted to the host amounts to approximately 8%. The remainder of the total time it takes to place an order, approximately 80%, is attributable to the time required for the trader to read the prices displayed and to enter a trade order. The present invention provides a significant advantage during the slowest portion of the trading cycle—while the trader manually enters his order. Traders recognize that the value of time savings in this portion may amount to millions of dollars annually.

In existing systems, multiple elements of an order must be entered prior to an order being sent to market, which is time consuming for the trader. Such elements include the commodity symbol, the desired price, the quantity and whether a buy or a sell order is desired. The more time a trader takes entering an order, the more likely the price on which he wanted to bid or offer will change or not be available in the market. The market is fluid as many traders are sending orders to the market simultaneously. It fact, successful markets strive to have such a high volume of trading that any trader who wishes to enter an order will find a match and have the order filled quickly, if not immediately. In such liquid markets, the prices of the commodities fluctuate rapidly. On a trading screen, this results in rapid changes in the price and quantity fields within the market grid. If a trader intends to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars. The faster a trader can trade, the less likely it will be that he will miss his price and the more likely he will make money.

SUMMARY OF THE INVENTION

The inventors have developed the present invention which overcomes the drawbacks of the existing trading systems and dramatically reduces the time it takes for a trader to place a trade when electronically trading on an exchange. This, in turn, increases the likelihood that the trader will have orders filled at desirable prices and quantities.

The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

Specifically, the present invention is directed to a graphical user interface for displaying the market depth of a commodity traded in a market, including a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and asks. In this embodiment the pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto. Also described herein is a method and system for placing trade orders using such displays.

These embodiments, and others described in greater detail herein, provide the trader with improved efficiency and versatility in placing, and thus executing, trade orders for commodities in an electronic exchange. Other features and advantages of the present invention will become apparent to those skilled in the art from the following detailed description. It should be understood, however, that the detailed description and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the scope of the present invention may be made without departing from the spirit thereof, and the invention includes all such modifications.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates the network connections between multiple exchanges and client sites;

FIG. **2** illustrates screen display showing the inside market and the market depth of a given commodity being traded;

FIG. **3** illustrates the Mercury display of the present invention;

FIG. **4** illustrates the Mercury display at a later time showing the movement of values when compared to FIG. 3;

FIG. **5** illustrates a Mercury display with parameters set in order to exemplify the Mercury trading method; and

FIG. **6** is a flowchart illustrating the process for Mercury display and trading.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As described with reference to the accompanying figures, the present invention provides a display and trading method to ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to place trade orders quickly and efficiently. A commodity's market depth is the current bid and ask prices and quantities in the market. The display and trading method of the invention increase the likelihood that the trader will be able to execute orders at desirable prices and quantities.

In the preferred embodiment, the present invention is implemented on a computer or electronic terminal. The computer is able to communicate either directly or indirectly (using intermediate devices) with the exchange to receive and transmit market, commodity, and trading order information. It is able to interact with the trader and to generate contents and characteristics of a trade order to be sent to the exchange. It is envisioned that the system of the present invention can be implemented on any existing or future terminal or device with the processing capability to perform the functions described herein. The scope of the present invention is not limited by the type of terminal or device used. Further, the specification refers to a single click of a mouse as a means for user input and interaction with the terminal display as an example of a single action of the user. While this describes a preferred mode of interaction, the scope of the present invention is not limited to the use of a mouse as the input device or to the click of a mouse button as the user's single action. Rather, any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device, is considered a single action of the user for the purposes of the present invention.

The system can be configured to allow for trading in a single or in multiple exchanges simultaneously. Connection of the system of the present invention with multiple exchanges is illustrated in FIG. 1. This figure shows multiple host exchanges **101–103** connected through routers **104–106** to gateways **107–109**. Multiple client terminals **110–116** for use as trading stations can then trade in the multiple exchanges through their connection to the gateways **107–109**. When the system is configured to receive data from multiple exchanges, then the preferred implementation is to translate the data from various exchanges into a simple format. This. "translation" function is described below with reference to FIG. 1. An applications program interface ("TT API" as depicted in the figure) translates the incoming data formats from the different exchanges to a simple preferred data format. This translation function may be disposed anywhere in the network, for example, at the gateway server, at the individual workstations or at both. In addition, the storage at gateway servers and at the client workstations, and/or other external storage cache historical data such as order books which list the client's active orders in the market; that is, those orders that have neither been filled nor cancelled. Information from different exchanges can be displayed at one or in multiple windows at the client workstation. Accordingly, 'while reference is made through the remainder of the specification to a single exchange to which a trading terminal is connected, the scope of the invention includes the ability to trade, in accordance with the trading methods described herein, in multiple exchanges using a single trading terminal.

The preferred embodiments of the present invention include the display of "Market Depth" and allow trader to view the market depth of a commodity and to execute trades within the market depth with a single click of a computer mouse button. Market Depth represents the order book with the current bid and ask prices and quantities in the market. In other words, Market Depth is each bid and ask that was entered into the market, subject to the limits noted below, in addition to the inside market. For a commodity being traded, the "inside market" is the highest bid price and the lowest ask price.

The exchange sends the price, order and fill information to each trader on the exchange. The present invention processes this information and maps it through simple

algorithms and mapping tables to positions in a theoretical grid program or any other comparable mapping technique for mapping data to a screen. The physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art. The present invention is not limited by the method used to map the data to the screen display.

How far into the market depth the present invention can display depends on how much of the market depth the exchange provides. Some exchanges supply an infinite market depth, while others provide no market depth or only a few orders away from the inside market. The user of the present invention can also chose how far into the market depth to display on his screen. FIG. **2** illustrates a screen display of an invention described in a commonly owned co-pending application entitled "Click Based Trading with Market Depth Display" Ser. No. 09/589,751, filed on Jun. 9, 2000, the contents of which are incorporated herein by reference. This display shows the inside market and the market depth of a given commodity being traded. Row **1** represents the "inside market" for the commodity being traded which is the best (highest) bid price and quantity and the best (lowest) ask price and quantity. Rows **2–5** represent the "market depth" for the commodity being traded. In the preferred embodiment of the present invention, the display of market depth (rows **2–5**) lists the available next-best bids, in column **203**, and asks, in column **204**. The working bid and ask quantity for each price level is also displayed in columns **202** and **205** respectively (inside market–row **1**). Prices and quantities for the inside market and market depth update dynamically on a real time basis as such information is relayed from the market.

In the screen display shown in FIG. **2**, the commodity (contract) being traded is represented in row **1** by the character string "CDHO". The Depth column **208** will inform the trader of a status by displaying different colors. Yellow indicates that the program application is waiting for data. Red indicates that the Market Depth has failed to receive the data from the server and has "timed out." Green indicates that the data has just been updated. The other column headings in this and all of the other figures, are defined as follows. BidQty (Bid Quantity): the quantity for each working bid, BidPrc (Bid Price): the price for each working bid, AskPrc (Ask Price): the price for each working ask, AskQty (Ask Quantity): the quantity for each working ask, LastPrc (Last Price): the price for the last bid and ask that were matched in the market and LastQty (Last Quantity): the quantity added at the last price. Total represents the total quantity traded of the given commodity.

The configuration of the screen display itself informs the user in a more convenient and efficient manner than existing systems. Traders gain a significant advantage by seeing the market depth because they can see trends in the orders in the market. The market depth display shows the trader the interest the market has in a given commodity at different price levels. If a large amount of bids or asks are in the market near the trader's position, he may feel he should sell or buy before the inside market reaches the morass of orders. A lack of orders above or below the inside market might prompt a trader to enter orders near the inside market. Without seeing the market depth, no such strategies could be utilized. Having the dynamic market depth, including the bid and ask quantities and prices of a traded commodity aligned with and displayed below the current inside market of the commodity conveys the information to the user in a more intuitive and easily understandable manner. Trends in the trading of, the commodity and other relevant characteristics are more easily identifiable by the user through the use of the present invention.

Various abbreviations are used in the screen displays, and specifically, in the column headings of the screen displays reproduced herein. Some abbreviations have been discussed above. A list of common abbreviations and their meanings is provided in Table 1.

TABLE I

Abbreviations.

COLUMN	DESCRIPTION	COLUMN	DESCRIPTION
Month	Expiration Month/Year	TheoBid	Theoretical Bid Price
Bid Mbr(1)	Bid Member ID	TheoAsk	Theoretical Ask Price
WrkBuys(2)	Working Buys for entire Group ID	Qact	Quote Action (Sends individual quotes)
BidQty	Bid Quantity	BQQ	Test Bid Quote Quantity
ThrshBid(6)	Threshold Bid Price	BQP	Test Bid Quote Price
BidPrc	Bid Price	Mkt BQQ	Market Bid Quote Quantity
Bid Qty Accurn	Accumulated Bid Quantity	Mkt BQP	Market Bid Quote Price
BidPrc Avg	Bid Price Average	Quote	Checkbox activates/ deactivates contract for quoting
AskPrc Avg	Ask Price Average	Mkt AQQ	Market Ask Quote Quantity
AskQty Accurn	Accumulated Ask Quantity	Mkt AQP	Market Ask Quote Price
AskPrc	Ask Price	AQP	Ask Quote Price
ThrshAsk(6)	Threshold Ask Price	AQQ	Ask Quote Quantity
AskQty	Ask Quantity	Imp BidQty(5)	Implied Bid Quantity
WrkSells(2)	Working Sells for entire Group ID	Imp BidPrc(5)	Implied Bid Price
Ask Mbr(1)	Ask Member ID	Imp AskQty(5)	Implied Ask Quantity
NetPos	Net Position	Imp AskPrc(5)	Implied Ask Price
FFNetPos	Fast Fill Net Position	Gamma(3)	Change in Delta given 1 pt change in underlying
LastPrc	Last Price	Delta (3)	Change in price given 1 pt change in underlying
LastQty	Last Quantity	Vola (3)	Percent volatility
Total	Total Traded Quantity	Vega (3)	Price change given 1% change in Vola
High	High Price	Rhop (3)	Price change given 1% change in interest rate

TABLE 1-continued

Abbreviations.

COLUMN	DESCRIPTION	COLUMN	DESCRIPTION
Low	Low Price	Theta(3)	Price change for every day that elapses
Open	Opening Price	Click Trd	Activate/deactivate click trading by contract
Close	Closing Price	S (Status)	Auction, Closed, FastMkt, Not Tradable, Pre-trading, Tradable, S = post-trading
Chng	Last Price-Last Close	Expiry	Expiration Month/Year
TheoPrc	Theoretical Price		

As described herein, the display and trading method of the present invention provide the user with certain advantages over systems in which a display of market depth, as shown in FIG. **2**, is used. The Mercury display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently. An example of such a Mercury display is illustrated in the screen display of FIG. **3**.

The display of market depth and the manner in which traders trade within the market depth can be effected in different manners, which many traders will find materially better, faster and more accurate. In addition, some traders may find the display of market depth to be difficult to follow. In the display shown in FIG. **2**, the market depth is displayed vertically so that both Bid and Ask prices descend the grid. The Bid prices descend the market grid as the prices decrease. Ask prices also descend the market grid as these prices actually increase. This combination may be considered counterintuitive and difficult to follow by some traders.

The Mercury display overcomes this problem in an innovative and logical manner. Mercury also provides an order entry system, market grid, fill window and summary of market orders in one simple window. Such a condensed display materially simplifies the trading system by entering and tracking trades in an extremely efficient manner. Mercury displays market depth in a logical, vertical fashion or horizontally or at some other convenient angle or configuration. A vertical field is shown in the figures and described for convenience, but the field could be horizontal or at an angle. In turn, Mercury further increases the speed of trading and the likelihood of entering orders at desired prices with desired quantities. In the preferred embodiment of the invention, the Mercury display is a static vertical column of prices with the bid and ask quantities displayed in vertical columns to the side of the price column and aligned with the corresponding bid and ask prices. An example of this display is shown in FIG. **3**.

Bid quantities are in the column **1003** labeled BidQ and ask quantities are in column **1004** labeled AskQ. The representative ticks from prices for the given commodity are shown in column **1005**. The column, does not list the whole prices (e.g. 95.89), but rather, just the last two digits (e.g. 89). In the example shown, the inside market, cells **1020**, is 18 (best bid quantity) at 89 (best bid price) and 20 (best ask quantity) at 90 (best ask price). In the preferred embodiment of the invention, these three columns are shown in different colors so that the trader can quickly distinguish between them.

The values in the price column are static; that is, they do not normally change positions unless a re-centering command is received (discussed in detail later). The values in the Bid and Ask columns however, are dynamic; that is, they move up and down (in the vertical example) to reflect the market depth for the given commodity. The LTQ column **1006** shows the last traded quantity of the commodity. The relative position of the quantity value with respect to the Price values reflects the price at which that quantity was traded. Column **1001** labeled E/W (entered/working) displays the current status of the trader's orders. The status of each order is displayed in the price row where it was entered. For example, in cells **1007**, the number next to S indicates the number of the trader's ordered lots that have been sold at the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not been filled–i.e. the system is working on filling the order. Blanks in this column indicate that no orders are entered or working at that price. In cells **1008**, the number next to B indicates the number of the trader's ordered lots that have been bought at the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not been filled–i.e. the system is working on filling the order.

Various parameters are set and information is provided in column **1002**. For example, "10:48:44" in cell **1009** shows the actual time of day. The L and R fields in cell **1010** indicate a quantity value, which may be added to the order quantity entered. This process is explained below with respect to trading under Mercury. Below the L and R fields, in cell **1011**, a number appears which represents the current market volume. This is the number of lots that have been traded for the chosen contract. Cell **1012**, "X 10", displays the Net Quantity, the current position of the trader on the chosen contract. The number "10" represents the trader's buys minus sells. Cell **1013** is the "Current Quantity"; this field represents the quantity for the next order that the trader will send to market. This can be adjusted with right and left clicks (up and down) or by clicking the buttons which appear below the Current Quantity in cells **1014**. These buttons increase the current quantity by the indicated amount; for example, "10" will increase it by 10; "1H" will increase it by 100, "1K" will increase it by 1000. Cell **1015** is the Clear button; clicking this button will clear the Current Quantity field. Cell **1016** is the Quantity Description; this is a pull down menu allowing the trader to chose from three Quantity Descriptions. The pull down menu is displayed when the arrow button in the window is clicked. The window includes NetPos, Offset and a field allowing the trader to enter numbers.. Placing a number in this field will set a default buy or sell quantity. Choosing "Offset" in this field will enable the L/R buttons of cell **1010**. Choosing "NetPos" in this field will set the current Net Quantity (trader's net position) as the trader's quantity for his next trade. Cell **1017** are +/– buttons; these buttons will alter the size of the screen-either larger (+) or smaller (–). Cell **1018** is used to invoke Net **0**; clicking this button will reset the Net Quantity

(cell **1011**) to zero. Cell **1019** is used to invoke Net Real; clicking this button will reset the Net Quantity (cell **10 11**) to its actual position.

The inside market and market depth ascend and descend as prices in the market increase and decrease. For example, FIG. **4** shows a screen displaying the same market as that of FIG. **3** but at a later interval where the inside market, cells **1101**, has risen three ticks. Here, the inside market for the commodity is 43 (best bid quantity) at 92 (best bid price) and 63 (best ask quantity) at 93 (best ask price). In comparing FIGS. **3** and **4**, it can be seen that the price column remained static, but the corresponding bids and asks rose up the price column. Market Depth similarly ascends, and descends the price column, leaving a vertical history of the market.

As the market ascends or descends the price column, the inside market, might go above or below the price column displayed on a trader's screen. Usually a trader will want to be able to see the inside market to assess future trades. The system of the present invention addresses this problem with a one click centering feature. With a single click at any point within the gray area, **1021**, below the "Net Real" button, the system will re-center the inside market on the trader's screen. Also, when using a three-button mouse, a click of the middle mouse button, irrespective of the location of the mouse pointer, will re-center the inside market on the trader's screen.

The same information and features can be displayed and enabled in a horizontal fashion. Just as the market ascends and descends the vertical Mercury display shown in FIGS. **3** and **4**, the market will move left and right in the horizontal Mercury display. The same data and the same information gleaned from the dynamical display of the data is provided. It is envisioned that other orientations can be used to dynamically display the data and such orientations are intended to come within the scope of the present invention.

Next, trading commodities, and specifically, the placement of trade orders using the Mercury display is described. Using the Mercury display and trading method, a trader would first designate the desired commodity and, if applicable, the default quantities. Then he can trade with single clicks of the right or left mouse button. The following equations are used by the system to generate trade orders and to determine the quantity and price to be associated with the trade order. The following abbreviations are used in these formulas: P=Price value of row clicked, R=Value in R field, L=Value in L field, Q=Current Quantity, Q_a=Total of all quantities in AskQ column at an equal or better price than P, Q_b=Total of all quantities in BidQ column at an equal or better price than P, N=Current Net Position, Bo=Buy order sent to market and So=Sell order—sent to market.

Apy order entered using right mouse button

$$Bo=(Q_a+R)P \quad \text{(Eq. 1)}$$

If BidQ field clicked.

$$So=(Q_b+R)P \quad \text{(Eq. 2)}$$

If AskQ field clicked.

Orders entered using the left mouse button

If "Offset" mode chosen in Quantity Description field then:

$$Bo=(Q_a+L)P \quad \text{(Eq. 3)}$$

If BidQ field clicked.

$$SO=(Q_b+L)P \quad \text{(Eq. 4)}$$

If AskQ field clicked.

If "number" mode chosen in Quantity Description field then:

$$Bo=QP \quad \text{(Eq. 5)}$$

$$So=QP \quad \text{(Eq. 6)}$$

If "NetPos" mode chosen in Quantity Description field then:

$$Bo=NP \quad \text{(Eq. 7)}$$

$$So=NP \quad \text{(Eq. 8)}$$

Orders can also be sent to market for quantities that vary according to the quantities available in the market; quantities preset by the trader; and which mouse button the trader clicks. Using this feature, a trader can buy or sell all of the bids or asks in the market at or better than a chosen price with one click. The trader could also add or subtract a preset quantity from the quantities outstanding in the market. If the trader clicks in a trading cell—i.e. in the BidQ or AskQ column, he will enter an order in the market. The parameters of the order depend on which mouse button he clicks and what preset values he set.

Using the screen display and values from FIG. **5**, the placement of trade orders using the Mercury display and trading method is now described using examples. A left click on the 18 in the BidQ column **1201** will send an order to market to buy **17** lots (quantity #chosen on the Quantity Description pull down menu cell **1204**) of the commodity at a price of 89 (the corresponding price in the Prc column **1203**). Similarly, a left click on the 20 in the AskQ column **1202** will send an order to market to sell **17** lots at a price of 90.

Using the right mouse button, an order would be sent to market at the price that corresponds to the row clicked for the total quantity of orders in the market that equal or better the price in that row plus the quantity in the R field **1205**. Thus, a right click in the AskQ column **1202** in the 87 price row will send a sell order to market at a price of 87 and a quantity of 150. 150 is the sum of all the quantities 30, 97, 18 and 5. 30, 97 and 18 are all of the quantities in the market that would meet or better the trader's sell order price of 87. These quantities are displayed in the BidQ column **1201** because this column represents the orders outstanding in the market to purchase the commodity at each corresponding price. The quantity 5 is the quantity pre-set in the R field **1205**.

Similarly, a right click in the BidQ column **1201** at the same price level of 87 would send a buy limit order to market for a quantity of 5 at a price of 87. The quantity is determined in the game manner as above. In this example, though, there are no orders in the market that equal or better the chosen price—there are no quantities in the AskQ column **1202** that equal or better this price. Therefore, the sum of the equal or better quantities is zero ("0"). The total order entered by the trader will be the value in the R field, which is 5.

An order entered with the left mouse button and the "Offset" option chosen in the quantity description field **1204**

will be calculated in the same way as above, but the quantity in the L field **1206** will be added instead of the quantity in the R field **1205**. Thus, a left click in the BidQ column **1201** in the 92 price row will send a buy order to market at a price of 92 and a quantity of 96. 96 is the sum of all the quantities 45, 28, 20 and 3. 45, 28 and 20 are all quantities in the market that would meet or better the trader's buy order price of 92. These quantities are displayed in the AskQ column **1202** because this column represents the orders outstanding in the market to sell the commodity at each corresponding price. The quantity 3 is the quantity pre-set in the L field **1206**.

The values in the L or R fields may be negative numbers. This would effectively decrease the total quantity sent to market. In other words, in the example of a right click in the AskQ column **1202** in the 87 price row, if the R field was −5, the total quantity sent to market would be 140 (30+97+18+(−5)).

If a trader chose the "NetPos" option in the quantity description field **1204**, a right click would still work as explained above. A left click would enter an order with a price corresponding to the price row clicked and a quantity equal to the current Net position of the trader. The Net position of the trader is the trader's current position on the chosen contract. In other words, if the trader has bought 10 more contracts than he has sold, this value would be 10. NetPos would not affect the quantity of an order sent with a right click.

If the trader chose a number value in the quantity description, a left click would send an order to market for the current quantity chosen by the trader. The default value of the current quantity will be the number entered in the quantity description field, but it could be changed by adjusting the figure in the current quantity field **1204**.

This embodiment of the invention also allows a trader to delete all of his working trades with a single click of either the right or left mouse button anywhere in the last traded quantity (LTQ) column **1207**. This allows a trader to exit the market immediately. Traders will use this feature when they are losing money and want to stop the losses from pilling up. Traders may also use this feature to quickly exit the market upon making a desired profit. The invention also allows a trader to delete all of his. orders from the market at a particular price level. A click with either mouse button in the Entered/Working (E/W) column **1208** will delete all working orders in the cell that was clicked. Thus, if a trader believes that previously sent orders at a particular price that have not been filled would be poor trades, he can delete these orders with a single click.

The process for placing trade orders using the Mercury display and trading method of the present invention as described above is shown in the flowchart of FIG. **6**. First, in step **1301**, the trader has the Mercury display on the trading terminal screen showing the market for a given commodity. In step **1302**, the parameters are set in the appropriate fields, such as the L and R fields and the Current Quantity, NetPos or Offset fields from the pull down menu. In step **1303**, the mouse pointer is positioned and clicked over a cell in the Mercury display by the trader. In step **1304**, the system determines whether the cell clicked is a tradable cell (i.e. in the AskQ column or BidQ column). If not, then in step **1305**, no trade order is created or sent and, rather, other quantities are adjusted or functions are performed based upon the cell selected. Otherwise, in step **1306**, the system determines whether it was the left or the right button of the mouse that was clicked. If it was the right, then in step **1307**, the system will use the quantity in the R field when it determines the total quantity of the order in step **1310**. If the left button was clicked, then in step **1308**, the system determines which quantity description was chosen: Offset, NetPos or an actual number.

If Offset was chosen, then the system, in step **1309**, will use the quantity in the L field when it determines the total quantity of the. order in step **1310**. If NetPos was chosen, then the system, in step **1312**, will determine that the total quantity for the trade order will be current NetPos value, i.e. the net position of the trader in the given commodity. If an actual number was used as the quantity description, then, in step **1311**, the system will determine that the total quantity for the trade order will be the current quantity entered. In step **1310**, the system will determine that the total quantity for the trade order will be the value of the R field (if step **1307** was taken) or the value of the L field (if step **1309** was taken) plus all quantities in the market for prices better than or equal to the price in the row clicked. This will add up the quantities for each order in, the market that will fill the order being entered by the trader (plus the L or R value).

After either steps **1310**, **1311** or **1312**, the system, in step **1313**, determines which column was clicked, BidQ or AskQ. If AskQ was clicked, then, in step **1314**, the system sends a sell limit order to the market at the price corresponding to the row for the total quantity as already determined. If BidQ was clicked, then, in-step **1315**, the system sends a buy limit order to the market at the price corresponding to the row for the total quantity as already determined.

It should be understood that the above description of the invention and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the scope of the present invention may be made without departing from the spirit thereof, and the present invention includes all such changes and modifications.

We claim:

1. A method for 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, the method comprising:

dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

in response to a selection of a particular location of the order entry region by a single action of a user input

device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

2. The method of claim 1 wherein the bid and ask display regions and the order entry region comprise columns with a plurality of cells that are displayed as a grid such that the cells of each column are aligned.

3. The method of claim 1 wherein the bid and ask display regions and the order entry region are oriented vertically.

4. The method of claim 1 wherein the bid and ask display regions and the order entry region are oriented horizontally.

5. The method of claim 1 wherein one of the plurality of locations of bid display region comprises a blank region in which there is no first indicator displayed.

6. The method of claim 1 wherein one of the plurality of locations of the ask display region comprises a blank region in which there is no first indicator displayed.

7. The method of claim 1 comprising the step of displaying at least a portion of the common static price axis in a price display region.

8. The method of claim 7 wherein the bid display region, the ask display region, the order entry region and the price display region comprise columns with a plurality of cells that are displayed as a grid such that the cells of each column are aligned.

9. The method of claim 7 wherein the bid display region, the ask display region, the order entry region and the price display region are oriented vertically.

10. The method of claim 7 wherein the bid display region, the ask display region, the order entry region and the price display region are oriented horizontally.

11. The method of claim 1 further comprising the steps of:

dynamically displaying a third indicator at one of the plurality of locations in the bid display region, the third indicator representing quantity associated with at least one order to buy the commodity at a price different than the highest bid price currently available in the market; and

dynamically displaying a fourth indicator at one of the plurality of locations in the ask display region, the fourth indicator representing quantity associated with at least one order to sell the commodity at a price different than the lowest ask price currently available in the market.

12. The method of claim 11 wherein a location of the plurality of locations of the bid display region comprises a blank region in which there is no first or third indicator displayed.

13. The method of claim 1 wherein a location of the plurality of locations of the ask display region comprises a blank region in which there is no second or fourth indicator displayed.

14. The method of claim 1 wherein the order entry region comprises:

a bid order entry region comprising a plurality of locations for receiving commands to send buy orders, each location corresponding to a price level along the common static price axis; and

an ask order entry region comprising a plurality of locations for receiving commands to send sell orders, each location corresponding to a price level along the common static price axis.

15. The method of claim 14 wherein the bid order entry region overlaps with the bid display region and the ask order entry region overlaps with the ask display region.

16. The method of claim 1 further comprising dynamically displaying an entered order indicator in association with the price levels arranged along the common static price axis.

17. The method of claim 16 wherein the entered order indicator is displayed in an entered order region.

18. The method of claim 1 further comprising dynamically displaying a last trade indicator in association with the common static price axis.

19. The method of claim 18 wherein the last trade indicator is displayed in a last trade region.

20. The method of claim 1 further comprising the steps of:

displaying the first indicator at a first location associated with a first price level on the common static price axis at a first time; and

displaying the first indicator at a second location associated with a different price level on the common static price axis at a second time subsequent to the first time.

21. The method of claim 1 further comprising the steps of:

displaying the second indicator at a first location associated with a first price level on the common static price axis at a first time; and

displaying the second indicator at a second location associated with a different price level on the common static price axis at a second time subsequent to the first time.

22. The method of claim 1 further comprising the steps of:

displaying the first indicator at a first location associated with a particular price level on the common static price axis; and

repositioning the common static price axis such that the first indicator is displayed at a second location associated with the particular price level on the common static price axis.

23. The method of claim 1 further comprising the steps of:

displaying the second indicator at a first location associated with a particular price level on the common static price axis; and

repositioning the common static price axis such that the second indicator is displayed at a second location associated with the particular price level on the common static price axis.

24. The method of claim 1 wherein the bid and ask display regions are displayed in different colors.

25. The method of claim 1 wherein the first and second indicators are displayed in different colors.

26. The method of claim 1 wherein the bid and ask display regions are displayed in a window further comprising centering the display of the first and second indicators in the window upon receipt of a centering instruction.

27. A computer readable medium having program code recorded thereon for execution on a computer for 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, the program code causing a machine to perform the following method steps:

dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a the price level along the common Static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

28. The method of claim **11** wherein the first and third indicators are displayed in locations of the bid display region that are arranged along an axis which is parallel to the common static price axis.

29. The method of claim **11** wherein the second and fourth indicators are displayed in locations of the ask display region that are arranged along an axis which is parallel to the common static price axis.

30. The method of claim **11** comprising the steps of:

displaying the first indicator at a first location associated with a first price level on the common static price axis at a first time; and

displaying the first indicator at a second location associated with a different price level on the common static price axis at a second time subsequent to the first time.

31. The method of claim **30** wherein the third and fourth indicators remain in the same location in the bid and ask display regions, respectively, before and after the first indicator is displayed at the second location.

32. The method of claim **31** wherein each location of the bid display region corresponds to a different price level along the common static price axis and each location of the ask display region corresponds to a different price level along the common static price.

33. The method of claim **11** comprising the steps of:

displaying the second indicator at a first location associated with a first price level on the common static price axis at a first time; and

displaying the second indicator at a second location associated with a different price level on the common static price axis at a second time subsequent to the first time.

34. The method of claim **33** wherein the third and fourth indicators remain in the same location in the bid an ask display regions, respectively, before and after the second indicator is displayed at the second location.

35. The method of claim **34** wherein each location of the bid display region corresponds to a different price level along the common static price axis and each location of the ask display region corresponds to a different price level along the common static price.

36. The method of claim **1** wherein the bid and ask display regions are displayed separately.

37. The method of claim **1** wherein the first and second indicators are based on an exchange order book and wherein the price levels along the common static price axis do not move in response to the addition of a price to the exchange order book, the additional price comprising a price for which there is a corresponding displayed location in at least one of the bid and ask display regions.

38. The method of claim **37** wherein the price levels along the common static price axis do not move in response to the removal of a price from the exchange order book, the removed price comprising a price for which there is a corresponding displayed location in at least one of the bid and ask display regions.

39. The method of claim **1** wherein the first and second indicators are based on an exchange order book and the price levels along the common static price axis never move in response to a price change in the exchange order book relating to a price which corresponds to a displayed location in at least one of the bid and ask display regions.

40. The method of claim **1** the plurality of parameters comprises a price and type of order.

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ABSTRACT

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 that the trader will have orders filled at desirable prices and quantities. The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Priority

The present application claims priority to a U.S. Provisional Patent Application entitled "Market Depth Display Click Based Trading and Mercury Display" filed March 2, 2000, the contents of which are incorporated herein by reference.

Field of Invention

The present invention is directed to the electronic trading of commodities. Specifically, the invention provides a trader with a versatile and efficient tool for executing trades. It facilitates the display of and the rapid placement of trade orders within the market trading depth of a commodity, where a commodity includes anything that can be traded with quantities and/or prices.

Background Of The Invention

At least 60 exchanges throughout the world utilize electronic trading in varying degrees to trade stocks, bonds, futures, options and other products. These electronic exchanges are based on three components: mainframe computers (host), communications servers, and the exchange participants' computers (client). The host forms the electronic heart of the fully computerized electronic trading system. The system's operations cover order-matching, maintaining order books and positions, price information, and managing and updating the database for the online trading day as well as nightly batch runs. The host is also equipped with external interfaces that maintain uninterrupted online contact to quote vendors and other price information systems.

Traders can link to the host through three types of structures: high speed data lines, high speed communications servers and the Internet. High speed data lines establish direct connections between the client and the host. Another connection can be established by configuring high speed networks or communications servers at strategic access points worldwide in locations where traders physically are located. Data is transmitted in both directions between traders and exchanges via dedicated high speed communication lines. Most exchange participants install two lines between the exchange and the client site or between the communication server and the client site as a safety measure against potential failures. An exchange's internal computer system is Also often installed with backups as a redundant measure to secure system availability. The third connection utilizes the Internet. Here, the exchange and the traders communicate back and forth through high speed data lines, which are connected to the Internet. This allows traders to be located anywhere they can establish a connection to the Internet.

Irrespective of the way in which a connection is established, the exchange participants' computers allow traders to participate in the market. They use software that creates specialized interactive trading screens on the traders' desktops. The trading screens enable traders to enter and execute orders, obtain market quotes, and monitor positions. The range and quality of features available to traders on their screens varies according to the specific software application being run. The installation of open interfaces in the development of an exchange's electronic strategy means users can choose, depending on their trading style and internal requirements, the means by which they will access the exchange.

The world's stock, bond, futures and options exchanges have volatile products with prices that move rapidly. To profit in these markets, traders must be able to react quickly. A skilled trader with the quickest software, the fastest communications, and the most sophisticated analytics can significantly improve his own or his firm's bottom line. The slightest speed advantage can generate significant returns in a fast moving market. In today's securities markets, a trader lacking a technologically advanced interface is at a severe competitive disadvantage.

Irrespective of what interface a trader uses to enter orders in the market, each market supplies and requires the same information to and from every trader. The bids and asks in the market make up the market data and everyone logged on to trade can receive this information if the exchange provides it. Similarly, every exchange requires that certain information be included in each order. For example, traders must supply information like the name of the commodity, quantity, restrictions, price and multiple other variables. Without all of this information, the market will not accept the order. This input and output of information the same for every trader.

With these variables being constant, a competitive speed advantage must come from other aspects of the trading cycle. When analyzing the time it takes to place a trade order for a given commodity, various steps contribute in different amounts to the total time required. Approximately 8% of the total time it takes to enter an order elapses between the moment the host generates the price for the commodity and the moment the client receives the price. The time it takes for the client application to display the price to the trader amounts to approximately 4%. The time it takes for a trade order to be transmitted to the host amounts to approximately 8%. The remainder of the total time it takes to place an order, approximately 80%, is attributable to the time required for the trader to read the prices displayed and to enter a trade order. The present invention provides a significant advantage during the slowest portion of the trading

cycle -- while the trader manually enters his order. Traders recognize that the value of time savings in this portion may amount to millions of dollars annually.

In existing systems, multiple elements of an order must be entered prior to an order being sent to market, which is time consuming for the trader. Such elements include the commodity symbol, the desired price, the quantity and whether a buy or a sell order is desired. The more time a trader takes entering an order, the more likely the price on which he wanted to bid or offer will change or not be available in the market. The market is fluid as many traders are sending orders to the market simultaneously. It fact, successful markets strive to have such a high volume of trading that any trader who wishes to enter an order will find a match and have the order filled quickly, if not immediately. In such liquid markets, the prices of the commodities fluctuate rapidly. On a trading screen, this results in rapid changes in the price and quantity fields within the market grid. If a trader intends to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars. The faster a trader can trade, the less likely it will be that he will miss his price and the more likely he will make money.

Summary Of The Invention

The inventors have developed the present invention which overcomes the drawbacks of the existing trading systems and dramatically reduces the time it takes for a trader to place a trade when electronically trading on an exchange. This, in turn, increases the likelihood that the trader will have orders filled at desirable prices and quantities.

The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal

plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

Specifically, the present invention is directed to a graphical user interface for displaying the market depth of a commodity traded in a market, including a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and asks. In this embodiment the pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto. Also described herein is a method and system for placing trade orders using such displays.

These embodiments, and others described in greater detail herein, provide the trader with improved efficiency and versatility in placing, and thus executing, trade orders for commodities in an electronic exchange. Other features and advantages of the present invention will become apparent to those skilled in the art from the following detailed description. It should be understood, however, that the detailed description and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the scope of the present invention may be made without departing from the spirit thereof, and the invention includes all such modifications.

Brief Description Of The Drawings

Figure 1 illustrates the network connections between multiple exchanges and client sites;

Figure 2 illustrates screen display showing the inside market and the market depth of a given commodity being traded;

Figure 3 illustrates the Mercury display of the present invention;

Figure 4 illustrates the Mercury display at a later time showing the movement of values when compared to Figure 3;

Figure 5 illustrates a Mercury display with parameters set in order to exemplify the Mercury trading method; and

Figure 6 is a flowchart illustrating the process for Mercury display and trading.

Detailed Description Of The Preferred Embodiments

As described with reference to the accompanying figures, the present invention provides a display and trading method to ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to place trade orders quickly and efficiently. A commodity's market depth is the current bid and ask prices and quantities in the market. The display and trading method of the invention increase the likelihood that the trader will be able to execute orders at desirable prices and quantities.

In the preferred embodiment, the present invention is implemented on a computer or electronic terminal. The computer is able to communicate either directly or indirectly (using intermediate devices) with the exchange to receive and transmit market, commodity, and trading order information. It is able to interact with the trader and to generate contents and characteristics of a trade order to be sent to the exchange. It is envisioned that the system of the present invention can be implemented on any existing or future terminal or device with the processing capability to perform the functions described herein. The scope of the present invention is not limited by the type of terminal or device used. Further, the specification refers to a single click of a mouse as a means for user input and interaction with the terminal display as an example of a single action of the user. While this describes a preferred mode of interaction, the

scope of the present invention is not limited to the use of a mouse as the input device or to the click of a mouse button as the user's single action. Rather, any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device, is considered a single action of the user for the purposes of the present invention.

The system can be configured to allow for trading in a single or in multiple exchanges simultaneously. Connection of the system of the present invention with multiple exchanges is illustrated in Figure 1. This figure shows multiple host exchanges 101-103 connected through routers 104-106 to gateways 107-109. Multiple client terminals 110-116 for use as trading stations can then trade in the multiple exchanges through their connection to the gateways 107-109. When the system is configured to receive data from multiple exchanges, then the preferred implementation is to translate the data from various exchanges into a simple format. This. "translation" function is described below with reference to Figure 1. An applications program interface ("TT API" as depicted in the figure) translates the incoming data formats from the different exchanges to a simple preferred data format. This translation function may be disposed anywhere in the network, for example, at the gateway server, at the individual workstations or at both. In addition, the storage at gateway servers and at the client workstations, and/or other external storage cache historical data such as order books which list the client's active orders in the market; that is, those orders that have neither been filled nor cancelled. Information from different exchanges can be displayed at one or in multiple windows at the client workstation. Accordingly, 'while reference is made through the remainder of the specification to a single exchange to which a trading terminal is connected, the scope of the invention includes the ability to trade, in accordance with the trading methods described herein, in multiple exchanges using a single trading terminal.

The preferred embodiments of the present invention include the display of "Market Depth" and allow trader to view the market depth of a commodity and to execute trades within the market depth with a single click of a computer mouse button. Market Depth represents the order book with the current bid and ask prices and quantities in the market. In other words, Market Depth is each bid and ask that was entered into the market, subject to the limits noted below, in addition to the inside market. For a commodity being traded, the "inside market" is the highest bid price and the lowest ask price.

The exchange sends the price, order and fill information to each trader on the exchange. The present invention processes this information and maps it through simple algorithms and mapping tables to positions in a theoretical grid program or any other comparable mapping technique for mapping data to a screen. The physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art. The present invention is not limited by the method used to map the data to the screen display.

How far into the market depth the present invention can display depends on how much of the market depth the exchange provides. Some exchanges supply an infinite market depth, while others provide no market depth or only a few orders away from the inside market. The user of the present invention can also chose how far into the market depth to display on his screen.

Figure 2 illustrates a screen display of an invention described in a commonly owned co-pending application entitled "Click Based Trading with Market Depth Display" serial no. ____, filed on _____ the contents of which are incorporated herein by reference. This display shows the inside market and the market depth of a given commodity being traded. Row 1 represents the "inside market" for the commodity being

traded which is the best (highest) bid price and quantity and the best (lowest) ask price and quantity. Rows 2-5 represent the "market depth" for the commodity being traded. In the preferred embodiment of the present invention, the display of market depth (rows 2-5) lists the available next-best bids, in column 203, and asks, in column 204. The working bid and ask quantity for each price level is also displayed in columns 202 and 205 respectively (inside market - row 1). Prices and quantities for the inside market and market depth update dynamically on a real time basis as such information is relayed ~~from the market.~~

In the screen display shown in Figure 2, the commodity (contract) being traded is represented in row 1 by the character string "CDHO". The Depth column 208 will inform the trader of a status by displaying different colors. Yellow indicates that the program application is waiting for data. Red indicates that the Market Depth has failed to receive the data from the server and has "timed out." Green indicates that the data has just been updated. The other column headings in this and all of the other figures, are defined as follows. BidQty (Bid Quantity): the quantity for each working bid, BidPrc (Bid Price): the price for each working bid, AskPrc (Ask Price): the price for each working ask, AskQty (Ask Quantity): the quantity for each working ask, LastPrc (Last Price): the price for the last bid and ask that were matched in the market and LastQty (Last Quantity): the quantity added at the last price. Total represents the total quantity traded of the given commodity.

The configuration of the screen display itself informs the user in a more convenient and efficient manner than existing systems. Traders gain a significant advantage by seeing the market depth because they can see trends in the orders in the market. The market depth display shows the trader the interest the market has in a given commodity at different price levels. If a large amount

of bids or asks are in the market near the trader's position, he may feel he should sell or buy before the inside market reaches the morass of orders. A lack of orders above or below the inside market might prompt a trader to enter orders near the inside market. Without seeing the market depth, no such strategies could be utilized. Having the dynamic market depth, including the bid and ask quantities and prices of a traded commodity aligned with and displayed below the current inside market of the commodity conveys the information to the user in a more intuitive and easily understandable manner. Trends in the trading of, the commodity and other relevant characteristics are more easily identifiable by the user through the use of the present invention.

Various abbreviations are used in the screen displays, and specifically, in the column headings of the screen displays reproduced herein. Some abbreviations have been discussed above. A list of common abbreviations and their meanings is provided in Table 1.

Table I - Abbreviations.

COLUMN	DESCRIPTION	COLUMN	DESCRIPTION
Month	Expiration Month/Year	TheoBid	Theoretical Bid Price
Bid Mbr(1)	Bid Member ID	TheoAsk	Theoretical Ask Price
WrkBuys(2)	Working Buys for entire Group ID	Qact	Quote Action (Sends individual quotes)
BidQty	Bid Quantity	BQQ	Test Bid Quote Quantity
ThrshBid(6)	Threshold Bid Price	BQP	Test Bid Quote Price
BidPrc	Bid Price	Mkt BQQ	Market Bid Quote Quantity
Bid Qty Accurn	Accumulated Bid Quantity	Mkt BQP	Market Bid Quote Price
BidPrc Avg	Bid Price Average	Quote	Checkbox activates / deactivates contract for quoting
AskPrc Avg	Ask Price Average	Mkt AQQ	Market Ask Quote Quantity
AskQty Accurn	Accumulated Ask Quantity	Mkt AQP	Market Ask Quote Price
AskPrc	Ask Price	AQP	Ask Quote Price
ThrshAsk(6)	Threshold Ask Price	AQQ	Ask Quote Quantity
AskQty	Ask Quantity	Imp BidQty(5)	Implied Bid Quantity
WrkSells(2)	Working Sells for entire Group ID	Imp BidPrc(5)	Implied Bid Price
Ask Mbr(1)	Ask Member ID	Imp AskQty(5)	Implied Ask Quantity
NetPos	Net Position	Imp AskPrc(5)	Implied Ask Price
FFNetPos	Fast Fill Net Position	Gamma(3)	Change in Delta given 1 pt change in underlying
LastPrc	Last Price	Delta (3)	Change in price given 1 pt change in underlying
LastQty	Last Quantity	Vola (3)	Percent volatility
Total	Total Traded Quantity	Vega (3)	Price change given 1% change in Vola
High	High Price	Rhop (3)	Price change given 1% change in interest rate
Low	Low Price	Theta(3)	Price change for every day that elapses
Open	Opening Price	Click Trd	Activate / deactivate click trading by contract
Close	Closing Price	S (Status)	Auction, Closed, FastMkt, Not Tradable, Pre-trading, Tradable, S = post-trading
Chng	Last Price-Last Close	Expiry	Expiration Month/Year
TheoPrc	Theoretical Price		

As described herein, the display and trading method of the present invention provide the user with certain advantages over systems in which a display of market depth, as shown in Figure 2, is used. The Mercury display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently. An example of such a Mercury display is illustrated in the screen display of Figure 3.

The display of market depth and the manner in which traders trade within the market depth can be effected in different manners, which many traders will find materially better, faster and more accurate. In addition, some traders may find the display of market depth to be difficult to follow. In the display shown in Figure 2, the market depth is displayed vertically so that both Bid and Ask prices descend the grid. The Bid prices descend the market grid as the prices decrease. Ask prices also descend the market grid as these prices actually increase. This combination may be considered counterintuitive and difficult to follow by some traders.

The Mercury display overcomes this problem in an innovative and logical manner. Mercury also provides an order entry system, market grid, fill window and summary of market orders in one simple window. Such a condensed display materially simplifies the trading system by entering and tracking trades in an extremely efficient manner. Mercury displays market depth in a logical, vertical fashion or horizontally or at some other convenient angle or configuration. A vertical field is shown in the figures and described for convenience, but the field could be horizontal or at an angle. In turn, Mercury further increases the speed of trading and the likelihood of entering orders at desired prices with desired quantities. In the preferred embodiment of the invention, the Mercury display is a static vertical column of prices with the bid and ask quantities

displayed in vertical columns to the side of the price column and aligned with the corresponding bid and ask prices. An example of this display is shown in Figure 3.

Bid quantities are in the column 1003 labeled BidQ and ask quantities are in column 1004 labeled AskQ. The representative ticks from prices for the given commodity are shown in column 1005. The column, does not list the whole prices (e.g. 95.89), but rather, just the last two digits (e.g. 89). In the example shown, the inside market, cells 1020, is 18 (best bid quantity) at 89 (best bid price) and 20 (best ask quantity) at 90 (best ask price). In the preferred embodiment of the invention, these three columns are shown in different colors so that the trader can quickly distinguish between them.

The values in the price column are static; that is, they do not normally change positions unless a re-centering command is received (discussed in detail later). The values in the Bid and Ask columns however, are dynamic; that is, they move up and down (in the vertical example) to reflect the market depth for the given commodity. The LTQ column 1006 shows the last traded quantity of the commodity. The relative position of the quantity value with respect to the Price values reflects the price at which that quantity was traded. Column 1001 labeled El W (entered/working) displays the current status of the trader's orders. The status of each order is displayed in the price row where it was entered. For example, in cells 1007, the number next to S indicates the number of the trader's ordered lots that have been sold at the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not been filled-i.e. the system is working on filling the order. Blanks in this column indicate that orders are entered or working at that price. In cells 1008, the number next to B indicates the number of the trader's

ordered lots that have been bought a~ the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not ~~been filled - i.e. the system is working on filling the order.~~

Various parameters are set and information is provided in column 1002. For example, "10:48:44" in cell 1009 shows the actual time of day. The L and R fields in cell 1010 indicate a quantity value, which may be added to the order quantity entered. This process is explained below with respect to trading under Mercury. Below the L and R fields, in cell 1011, a number appears which represents the current market volume. This is the number of lots that have been traded for the chosen contract. Cell 1012, "X 10", displays the Net Quantity, the current position of the trader on the chosen contract. The number "10" represents the trader's buys minus sells. Cell 1013 is the "Current Quantity"; this field represents the quantity for the next order that the trader will send to market. This can be adjusted with right and left clicks (up and down) or by clicking the buttons which appear below the Current Quantity in cells 1014. These buttons increase the current quantity by the indicated amount; for example, "10" will increase it by 10; "1H" will increase it by 100; "1K" will increase it by 1000. Cell 1015 is the Clear button; clicking this button will clear the Current Quantity field. Cell 1016 is the Quantity Description; this is a pull down menu allowing the trader to chose from three Quantity Descriptions. The pull down menu is displayed when the arrow button in the window is clicked. The window includes NetPos, Offset and a field allowing the trader to enter numbers.. Placing a number in this field will set a default buy or sell quantity. Choosing "Offset" in this field will enable the L/R buttons of cell 1010. Choosing "NetPos" in this field will set the current Net Quantity (trader's net position) as the trader's quantity for his next trade. Cell 1017 are +/- buttons; these buttons will alter the size of the screen-either larger (+) or smaller (-). Cell 1018 is used to invoke Net 0; clicking this button will reset the Net Quantity (cell 1011) to zero. Cell 1019 is used to invoke Net Real; clicking this button will reset the Net Quantity (cell 10 11) to its actual position.

The inside market and market depth ascend and descend as prices in the market increase and decrease. For example, Figure 4 shows a screen displaying the same market as that of Figure 3 but at a later interval where the inside market, cells 1101, has risen three ticks. Here, the inside market for the commodity is 43 (best bid quantity) at 92 (best bid price) and 63 (best ask quantity) at 93 (best ask price). In comparing Figures 3 and 4, it can be seen that the price column remained static, but the corresponding bids and asks rose up the price column. Market Depth similarly ascends, and descends the price column, leaving a vertical history of the market.

As the market ascends or descends the price column, the inside market, might go above or below the price column displayed on a trader's screen. Usually a trader will want to be able to see the inside market to assess future trades. The system of the present invention addresses this problem with a one click centering feature. With a single click at any point within the gray area, 1021, below the "Net Real" button, the system will re-center the inside market on the trader's screen. Also, when using a three-button mouse, a click of the middle mouse button, irrespective of the location of the mouse pointer, will re-center the inside market on the trader's screen.

The same information and features can be displayed and enabled in a horizontal fashion. Just as -the market ascends and descends the vertical Mercury display shown in Figures 3 and 4, the market will move left and right in the horizontal Mercury display. The same data and the same information gleaned from the dynamical display of the data is provided. It is envisioned that other orientations can be used to dynamically display the data and such orientations are intended to come within the scope of the present invention.

Next, trading commodities, and specifically, the placement of trade orders using the Mercury display is described. Using the Mercury display and trading method, a trader would first designate the desired commodity and, if applicable, the default quantities. Then he can trade with single clicks of the right or left mouse button. The following equations are used by the system to generate trade orders and to determine the quantity and price to be associated with the trade order. The following abbreviations are used in these formulas: P = Price value of row clicked, R = Value in R field, L = Value in L field, Q = Current Quantity, Q_a = Total of all quantities in AskQ column at an equal or better price than P, Q_b = Total of all quantities in BidQ column at an equal or better price than P, N = Current Net Position, Bo = Buy order sent to market and So = Sell order -sent to market.

Any order entered using right mouse button

Bo = $(Q_a + R)P$ (Eq. 1) If BidQ field clicked.

So = $(Q_b + R)P$ (Eq. 2) If AskQ field clicked.

Orders entered using the left mouse button

If "Offset" mode chosen in Quantity Description field then:

Bo = $(Q_a + L)P$ (Eq. 3) If BidQ field clicked.

SO = $(Q_b + L)P$ (Eq. 4) If AskQ field clicked.

If "number" mode chosen in Quantity Description field then:

Bo = QP (Eq. 5)

So = QP (Eq. 6)

If "NetPos" mode chosen in Quantity Description field then:

Bo = NP (Eq. 7)

So = NP (Eq. 8)

Orders can also be sent to market for quantities that vary according to the quantities available in the market; quantities preset by the trader; and which mouse button the trader clicks. Using this feature, a trader can buy or sell all of the bids or asks in the market at or better than a chosen price with one click. The trader could also add or subtract a preset quantity from the quantities outstanding in the market. If the trader clicks in a trading cell - i.e. in the BidQ or AskQ column, he will enter an order in the market. The parameters of the order depend on which mouse button he clicks and what preset values he set.

Using the screen display and values from Figure 5, the placement of trade orders using the Mercury display and trading method is now described using examples. A left click on the 18 in the BidQ column 1201 will send an order to market to sell 17 lots (quantity # chosen on the Quantity Description pull down menu cell 1204) of the commodity at a price of 89 (the corresponding price in the Prc column 1203). Similarly, a left click on the 20 in the AskQ column 1202 will send an order to market to buy 17 lots at a price of 90.

Using the right mouse button, an order would be sent to market at the price that corresponds to the row clicked for the total quantity of orders in the market that equal or better the price in that row plus the quantity in the R field 1205. Thus, a right click in the AskQ column 1202 in the 87 price row will send a sell order to market at a price of 87 and a quantity of 150. 150 is the sum of all the quantities 30, 97, 18 and 5. 30, 97 and 18 are all of the quantities in the market that would meet or better the trader's sell order price of 87. These quantities are displayed in the BidQ column 1201 because this column represents the orders outstanding in the market to purchase the commodity at each corresponding price. The quantity 5 is the quantity pre-set in the R field 1205.

Similarly, a right click in the BidQ column 1201 at the same price level of 87 would send a buy limit order to market for a quantity of 5 at a price of 87. The quantity is determined in the game manner as above. In this example, though, there are no orders in the market that equal or better the chosen price - there are no quantities in the AskQ column 1202 that equal or better this price. Therefore, the sum of the equal or better quantities is zero ("0"). The total order entered by the trader will be the value in the R field, which is 5.

An order entered with the left mouse button and the "Offset" option chosen in the quantity description field 1204 will be calculated in the same way as above, but the quantity in the L field 1206 will be added instead of the quantity in the R field 1205. Thus, a left click in the BidQ column 1201 in the 92 price row will send a buy order to market at a price of 92 and a quantity of 96. 96 is the sum of all the quantities 45, 28, 20 and 3. 45, 28 and 20 are all quantities in the market that would meet or better the trader's buy order price of 92. These quantities are displayed in the AskQ column 1202 because this column represents the orders outstanding in the market to sell the commodity at each corresponding price. The quantity 3 is the quantity pre-set in the L field 1206.

The values in the L or R fields may be negative numbers. This would effectively decrease the total quantity sent to market. In other words, in the example of a right click in the AskQ column 1202 in the 87 price row, if the R field was -5, the total quantity sent to market would be 140 (30 + 97 + 18 + (-5)).

If a trader chose the "NetPos" option in the quantity description field 1204, a right click would still work as explained above. A left click would enter an order with a price corresponding to the price row clicked and a quantity equal to the current Net position of the trader. The Net position of the trader is the trader's current position on the

chosen contract. In other words, if the trader has bought 10 more contracts than he has sold, this value would be 10. NetPos would not affect the quantity of an order sent with a right click.

If the trader chose a number value in the quantity description, a left click would send an order to market for the current quantity chosen by the trader. The default value of the current quantity will be the number entered in the quantity description field, but it could be changed by adjusting the figure in the current quantity field 1204.

This embodiment of the invention also allows a trader to delete all of his working trades with a single click of either the right or left mouse button anywhere in the last traded quantity (LTQ) column 1207. This allows a trader to exit the market immediately. Traders will use this feature when they are losing money and want to stop the losses from pilling up. Traders may also use this feature to quickly exit the market upon making a desired profit. The invention also allows a trader to delete all of his. orders from the market at a particular price level. A click with either mouse button in the Entered/Working (E/W) column 1208 will delete all working orders in the cell that was clicked. Thus, if a trader believes that previously sent orders at a particular price that have not been filled would be poor trades, he can delete these orders with a single click.

The process for placing trade orders using the Mercury display and trading method of the present invention as described above is shown in the flowchart of Figure 6. First, in step 1301, the trader has the Mercury display on the trading terminal screen showing the market for a given commodity. In step 1302, the parameters are set in the appropriate fields, such as the L and R fields and the Current Quantity, NetPos or Offset fields from the pull down menu. In step 1303, the mouse pointer is positioned and clicked over a cell in the Mercury display by the trader. In step 1304, the system

determines whether the cell clicked is a tradable cell (i.e. in the AskQ column or BidQ column). If not, then in step 1305, no trade order is created or sent and, rather, other quantities are adjusted or functions are performed based upon the cell selected. Otherwise, in step 1306, the system determines whether it was the left or the right button of the mouse that was clicked. If it was the right, then in step 1307, the system will use the quantity in the R field when it determines the total quantity of the order in step 1310. If the left button was clicked, then in step 1308, the system determines which quantity description was chosen: Offset, NetPos or an actual number.

If Offset was chosen, then the system, in step 1309, will use the quantity in the L field when it determines the total quantity of the. order in step 1310. If NetPos was chosen, then the system, in step 1312, will determine that the total quantity for the trade order will be current NetPos value, i.e. the net position of the trader in the given commodity. If an actual number was used as the quantity description, then, in step 1311, the system will determine that the total quantity for the trade order will be the current quantity entered. In step 1310, the system will determine that the total quantity for the trade order will be the value of the R field (if step 1307 was taken) or the value of the L field (if step 1309 was taken) plus all quantities in the market for prices better than or equal to the price in the row clicked. This will add up the quantities for each order in, the market that will fill the order being entered by the trader (plus the L or R value).

After either steps 1310, 1311 or 1312, the system, in step 1313, determines which column was clicked, BidQ or AskQ. If AskQ was clicked, then, in step 1314, the system sends a sell limit order to the market at the price corresponding to the row for the total quantity as already determined. If BidQ was clicked, then, in-step 1315, the system sends a buy limit order to the market at the price corresponding to the row for the total quantity as already determined.

It should be understood that the above description of the invention and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the scope of the present invention may be made without departing from the spirit thereof, and the present invention includes all such changes and modifications.

WE CLAIM:

1. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market, said method comprising:

dynamically displaying a plurality of bids in the market for said commodity;

dynamically displaying of a plurality of asks in the market for said commodity; and

statically displaying prices corresponding to said plurality of bids and asks;

wherein said pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto.

2. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market according to claim 1, wherein said bids and asks are oriented vertically.

3. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market according to claim 1, wherein said bids and asks are oriented horizontally.

4. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market according to claim 1, wherein a plurality of said displayed bids and asks in the market include bid and ask quantities of the commodity.

5. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market according to claim 1, wherein said bids and asks are displayed in different colors.

6. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market according to claim 1, re-centering said prices corresponding to the bids and asks about an inside market price upon receipt of a re-centering instruction.

7. A method of displaying, on an electronic display device, the market depth of a commodity traded in a market according to claim 1, further comprising dynamically displaying entered and working orders in alignment with the prices corresponding thereto.

8. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market, comprising:

a first program code for dynamically displaying a plurality of bids in the market for said commodity;

a second program code for dynamically displaying of a plurality of asks in the market for said commodity; and

a third program code for statically displaying prices corresponding to said plurality of bids and asks;

wherein said pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto.

9. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market according to claim 8, further comprising program code to ensure that said displayed bids, asks and prices are oriented vertically.

10. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market according to claim 8, further comprising program code to ensure that said displayed bids, asks and prices are oriented horizontally.

11. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market according to claim 8, further comprising program code to ensure that a plurality of bids and asks in the market include bid and ask quantities of the commodity.

12. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market according to claim 8, further comprising program code to ensure that bids and asks are displayed in different colors.

13. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market according to claim 8, further comprising program code to ensure that said displayed prices corresponding to the bids and asks are re-centered about an inside market price upon receipt of a re-centering instruction.

14. A computer readable medium having program code recorded thereon for execution on a computer for displaying the market depth of a commodity traded in a market according to claim 8, further comprising program code for dynamically displaying entered and working orders in alignment with the prices corresponding thereto.

15. A graphical user interface for displaying the market depth of a commodity traded in a market, comprising:

a dynamic display of a plurality of bids in the market for said commodity;

a dynamic display of a plurality of asks in the market for said commodity; and

a static display of prices corresponding to said plurality of bids and asks;

wherein said pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto.

16. A graphical user interface according to claim 15, wherein said displays are oriented vertically.

17. A graphical user interface according to claim 15, wherein said displays are oriented horizontally.

18. A graphical user interface according to claim 15, wherein said displays of the pluralities of bids and asks in the market include bid and ask quantities of the commodity.

19. A graphical user interface according to claim 15, wherein said displays are displayed in different colors.

20. A graphical user interface according to claim 15, wherein said display of prices corresponding to the bids and asks is re-centered about an inside market price upon re-centering instruction from a user.

21. A graphical user interface according to claim 15, further comprising a display of entered and working orders displayed in alignment with the prices corresponding thereto.

22. A method of placing a trade order for a commodity on an electronic exchange, using a graphical user interface and a user input device and having preset parameters for trade orders, said method comprising:

displaying the market depth of a commodity traded in a market, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto; and

initiating placement of a trade order of the commodity through a single action of the user input device initiating placement of a trade order of the commodity through a single action of the user input device with a pointer of the user input device positioned over an area in said dynamic displays of bids and asks;

wherein the contents of the trade order are based in part upon the preset parameters and the position of the pointer at the time of said single action.

23. A method of placing a trade order according to claim 22, wherein said trade order is a buy order if the position of the pointer at the time of said single action is within the display of bids and wherein said trade order is a sell order if the position of the pointer at the time of said single action is within the display of asks.

24. A method of placing a trade order according to claim 23, wherein the trade order is for a pre-determined fixed quantity and for a price corresponding to the position of the pointer at the time of said single action.

25. A method of placing a trade order according to claim 23, wherein the trade order is for a quantity equal to a current net position of the user in the commodity and for a price corresponding to the position of the pointer at the time of said single action.

26. A method of placing a trade order according to claim 23, wherein the trade order is for a quantity equal to a pre-determined fixed offset plus the sum of all quantities in the market at prices better than or equal to a price corresponding to the position of the pointer at the time of said single action and for a price corresponding to said position.

27. A method of placing a trade order according to claim 26, wherein said offset is equal to a first pre-determined value if a single action of a first type is taken and said offset is equal to a second pre-determined value if a single action of a second type is taken.

28. A method of placing a trade order according to claim 22, further comprising canceling said trade order in response to a subsequent single action of the user input device.

29. A computer readable medium having program code recorded thereon, for execution on a computer having a graphical user interface and a user input device and having preset parameters for trade orders, to place a trade order for a commodity on an electronic exchange, comprising:

a first program code displaying the market depth of a commodity traded in a market, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto;

a second program code for initiating placement of a trade order of the commodity through a single action of the user input device with a pointer of the user input device positioned over an area in said dynamic displays of bids and asks; and

a third program code for setting characteristics of the trade order based in part upon the preset parameters and the position of the pointer at the time of said single action.

30. A computer readable medium having program code recorded thereon, for execution on a computer to place a trade order according to claim 29, further comprising program code for establishing that said trade order is a buy order if the position of the pointer at the time of said single action is within the display of bids and that said trade order is a sell order if the position of the pointer at the time of said single action is within the display of asks.

31. A computer readable medium having program code recorded thereon, for execution on a computer to place a trade order according to claim 30, further comprising program code for establishing that the trade order is for a pre-determined fixed quantity and for a price corresponding to the position of the pointer at the time of said single action.

32. A computer readable medium having program code recorded thereon, for execution on a computer to place a trade order according to claim 30, further comprising program code for establishing that the trade order is for a quantity equal to a current net position of the user in the commodity and for a price corresponding to the position of the pointer at the time of said single action.

33. A computer readable medium having program code recorded thereon, for execution on a computer to place a trade order according to claim 30, further comprising program code for establishing that the trade order ~~is for~~ a quantity equal to a pre-determined fixed offset plus the sum of all quantities in the market at prices better than or equal to a price corresponding to the position of the pointer at the time of said single action and for a price corresponding to said position.

34. A computer readable medium having program code recorded thereon, for execution on a computer to place a trade order according to claim 33, further comprising program code for establishing that said offset is equal to a first pre-determined value if a single action of a first type is taken and said offset is equal to a second pre-determined value if a single action of a second type is taken.

35. A client system for placing a trade order for a commodity on an electronic exchange, the system comprising:

a display device for displaying the market depth of a commodity traded in a market, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto;

a user input device for positioning a pointer thereof over an area in said dynamic displays of bids and asks and for initiating placement of a trade order of the commodity through a single action of the user input device; and

a trade order characteristics setting component for setting characteristics of the trade order based in part upon preset parameters and the position of the pointer at the time of said single action.

36. A client system for placing a trade order for a commodity according to claim 35, wherein said trade order characteristics setting component establishes that said trade order is a buy order if the position of the pointer at the time of said single action is within the display of bids and that said trade order is a sell order if the position of the pointer at the time of said single action is within the display of asks.

37. A client system for placing a trade order for a commodity according to claim 36, wherein said trade order characteristics setting component establishes that the trade order is for a pre-determined fixed quantity and for a price corresponding to the position of the pointer at the time of said single action.

38. A client system for placing a trade order for a commodity according to claim 36, wherein said trade order characteristics setting component establishes that the trade order is for a quantity equal to a current net position of the user in the commodity and for a price corresponding to the position of the pointer at the time of said single action.

39. A client system for placing a trade order for a commodity according to claim 36, wherein said trade order characteristics setting component establishes that the trade order is for a quantity equal to a predetermined fixed offset plus the sum of all quantities in the market at prices better than or equal to a price corresponding to the position of the pointer at the time of said single action and for a price corresponding to said position.

40. A client system for placing a trade order for a commodity according to claim 39, wherein said trade order characteristics setting component establishes that said offset is equal to a first pre-determined value if a single action of a first type is taken and said offset is equal to a second predetermined value if a single action of a second type is taken.

Atty. Dkt. No. 024051/0135

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I HEREBY DECLARE:

THAT my residence, post office address, and citizenship are as stated below next to my name;

THAT I believe I am the original, first, and sole inventor (if only one inventor is named below) or an original, first, and joint inventor (if plural inventors are named below or in an attached Declaration) of the subject matter which is claimed and for which a patent is sought on the invention entitled

CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

(Attorney Docket No. 024051/0135)

the specification of which (check one)

___ is attached hereto.

_X_ was filed on June 9, 2000 as United States Application Number or PCT International Application Number 09/590692 and was amended on _____ (if applicable).

THAT I do not know and do not believe that the same invention was ever known or used by others in the United States of America, or was patented or described in any printed publication in any country, before I (we) invented it;

THAT I do not know and do not believe that the same invention was patented or described in any printed publication in any country, or in public use or on sale in the United States of America, for more than one year prior to the filing date of this United States application;

THAT I do not know and do not believe that the same invention was first patented or made the subject of an inventor's certificate that issued in any country foreign to the United States of America before the filing date of this United States application if the foreign application was filed by me (us), or by my (our) legal representatives or assigns, more than twelve months (six months for design patents) prior to the filing date of this United States application;

THAT I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment specifically referred to above;

THAT I believe that the above-identified specification contains a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention, and sets forth the best mode contemplated by me of carrying out the invention; and

THAT I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.55.

I HEREBY CLAIM foreign priority benefits under Title 35, United States Code §119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number	Country	Foreign Filing Date	Priority Claimed?	Certified Copy Attached?

I HEREBY CLAIM the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

U.S. Provisional Application Number	Filing Date
60/186,322	March 2, 2000

I HEREBY CLAIM the benefit under Title 35, United States Code, §120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Application Number	Parent Filing Date	Parent Patent Number

I HEREBY APPOINT the following registered attorneys and agents of the law firm of FOLEY & LARDNER to have full power to prosecute this application and any continuations, divisions, reissues, and reexaminations thereof, to receive the patent, and to transact all business in the United States Patent and Trademark Office connected therewith:

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I UNDERSTAND AND AGREE THAT the foregoing attorneys and agents appointed by me to prosecute this application do not personally represent me or my legal interests, but instead represent the interests of the legal owner(s) of the invention described in this application.

I FURTHER DECLARE THAT all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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Date	AUGUST 24, 2000

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Date	8/19/00

002.349521

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Application Number	To Be Assigned
Filing Date	HEREWITH
First Named Inventor	Gary Alan Kemp II, et al
Group Art Unit	****
Examiner Name	****
Attorney Docket Number	120046-00003

I hereby appoint:

☒ Practitioners at Customer Number 25555 → *Place Customer Number Bar Code Label here*

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Name	Registration Number

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I am the:

☐ Applicant.

☒ Assignee of record of the entire interest. See 37 CFR 3.71.

Certificate under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

SIGNATURE of Applicant or Assignee of Record

Name	Michael G. Ryan
Signature	Michael G. Ryan
Date	JUNE 22, 2001

NOTE: Signatures of all the inventors or assignees of record of the entire interest or the r representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

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ASED TRADING WITH
GRID DISPLAY OF
KET DEPTH
ry Alan KEMP II et al.
Appl. No.: 09/894,637

FIG. 1

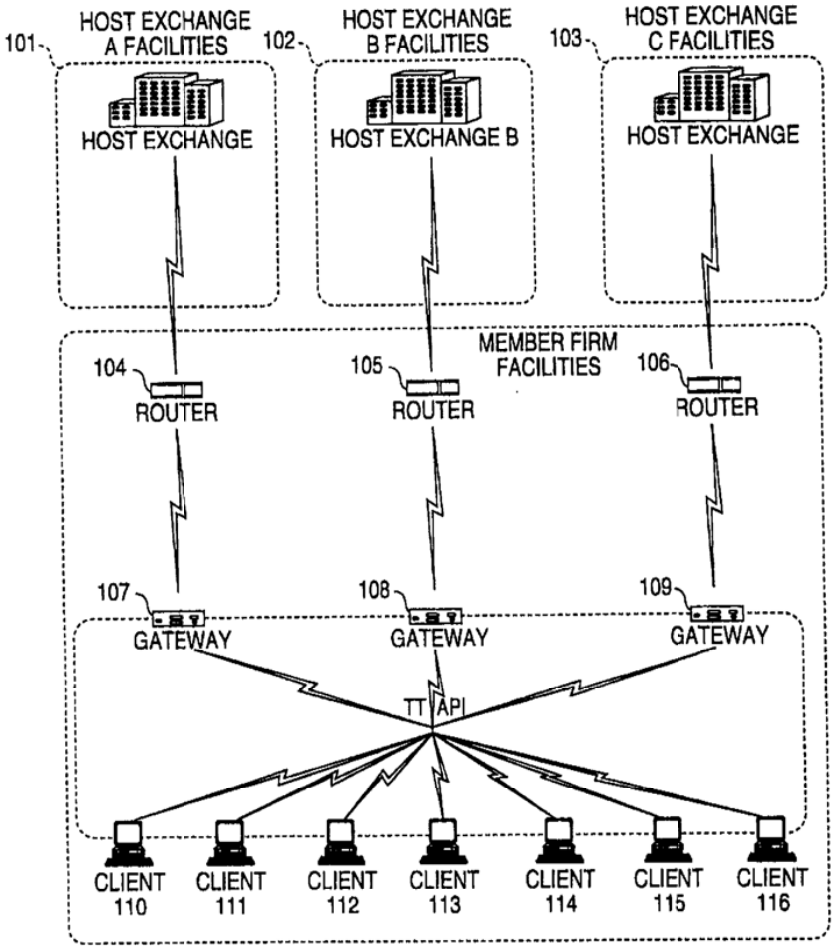

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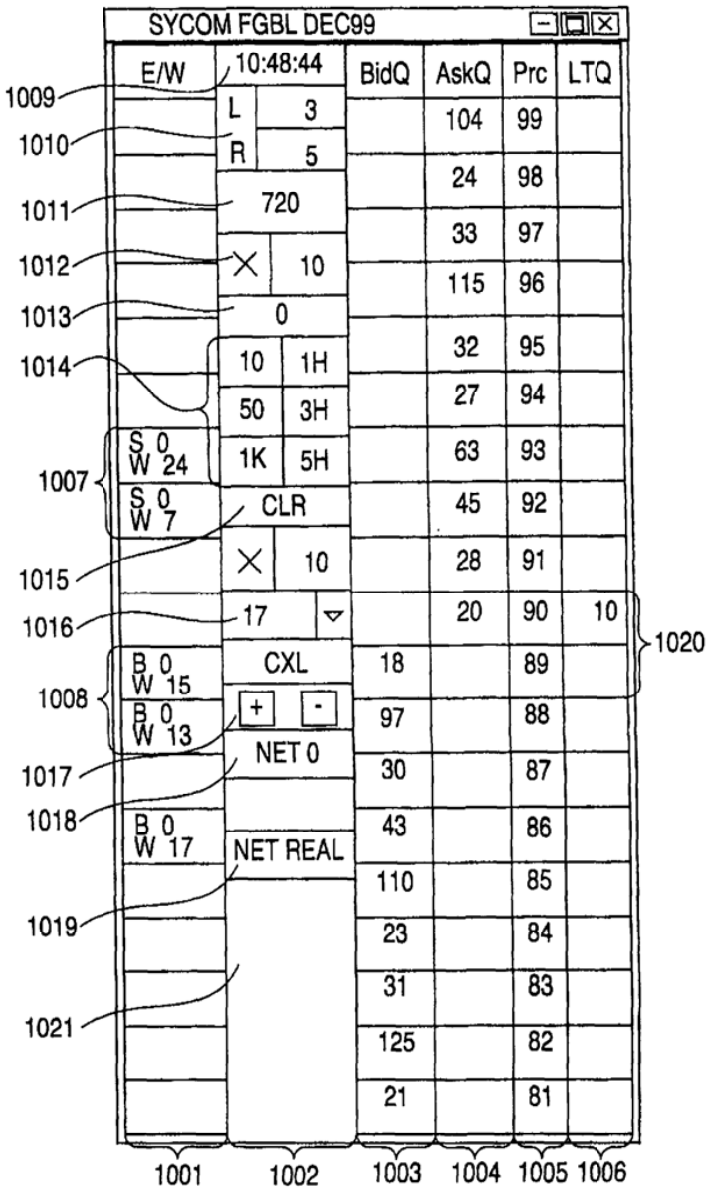
FIG. 2

	201 Contract	Depth	202 BidQty	203 BidPrc	204 AskPrc	205 AskQty	LastPrc	LastQty	Total
1	CDH0	•	785	7626	7627	21	7627	489	8230
2			626	7625	7629	815			
3			500	7624	7630	600			
4			500	7623	7631	2456			
5			200	7622	7632	800			

FIG. 3


SYCOM FGBL DEC99
E/W
10:48:44
BidQ
AskQ
Prc
LTQ
1009
1010
1011
1012
1013
1014
1007
1015
1016
1008
1017
1018
1019
1021
1020
L 3
R 5
720
10
0
10 1H
50 3H
1K 5H
S 0 W 24
S 0 W 7
CLR
10
17
CXL
B 0 W 15
B 0 W 13
+
-
NET 0
B 0 W 17
NET REAL
104 99
24 98
33 97
115 96
32 95
27 94
63 93
45 92
28 91
20 90 10
18 89
97 88
30 87
43 86
110 85
23 84
31 83
125 82
21 81
1001
1002
1003
1004
1005
1006

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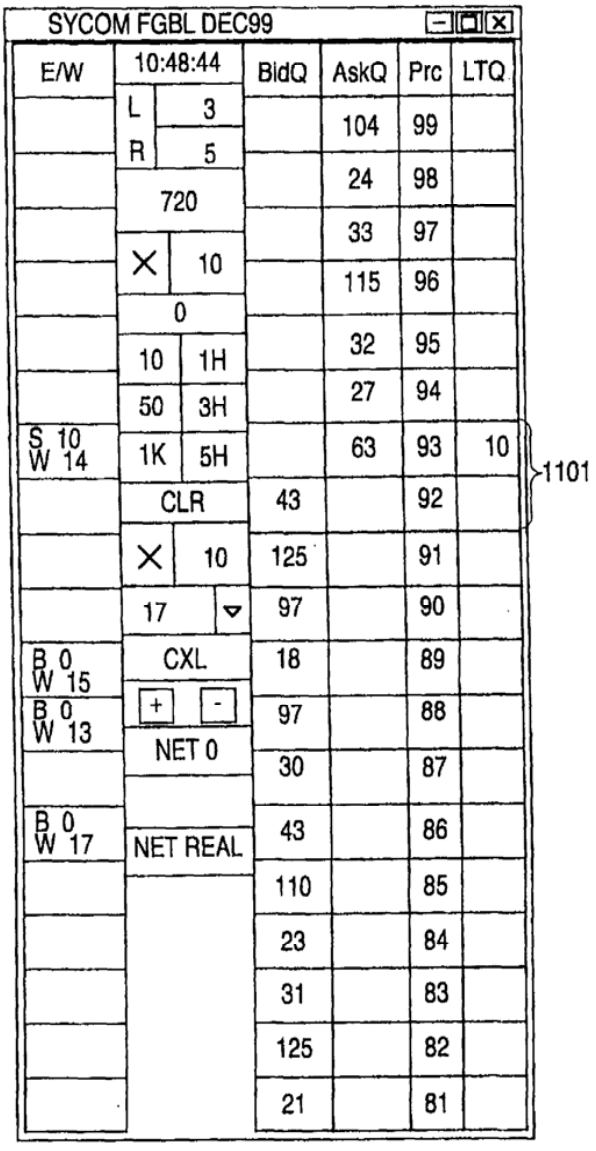
: BASED TRADING WITH VE GRID DISPLAY OF IARKET DEPTH

Gary Alan KEMP II et al.

Appl. No.: 09/894,637

FIG. 4



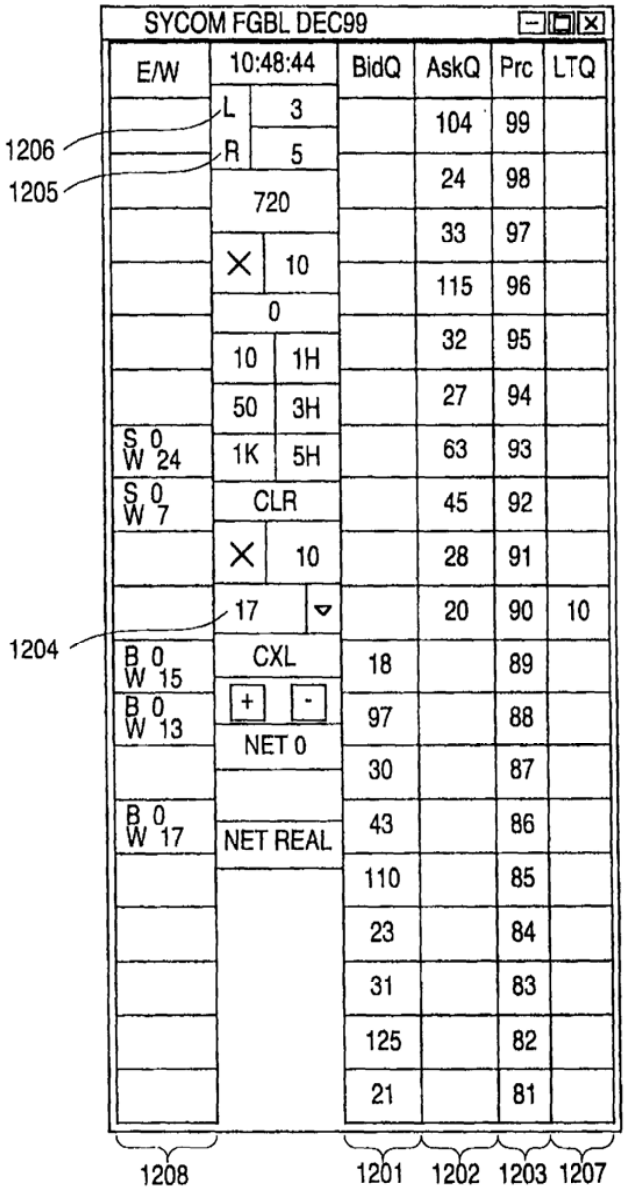
PRINT OF DRAWINGS AS ORIGINALLY FILED

K BASED TRADING WITH IVE GRID DISPLAY OF MARKET DEPTH

: Gary Alan KEMP II et al.

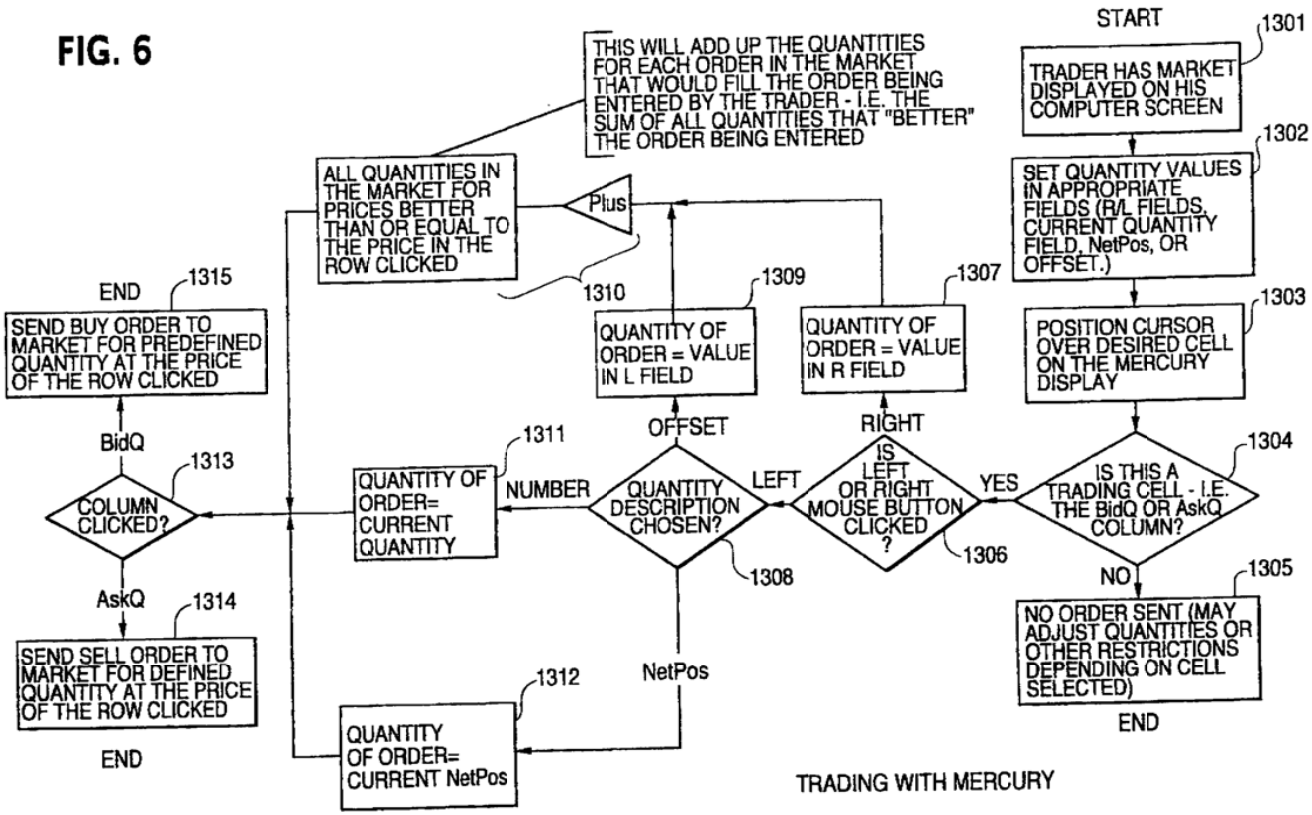
Appl. No.: 09/894,637

FIG. 5



PRINT OF DRAWINGS AS ORIGINALLY FILED

FIG. 6



TRADING WITH MERCURY

...BASED TRADING WITH ...IVE GRID DISPLAY OF ...MARKET DEPTH
...: Gary Alan KEMP II et ...
...pl. No.: 09/894,637

NON-PROVISIONAL APPLICATION FOR U. S. PATENT UNDER 37 CFR 1.53(b)
TRANSMITTAL FORM

Attorney Docket No. 120046-00003

Assistant Commissioner for Patents
Washington, D. C. 20231

"EXPRESS MAILING" Mailing Label No. EL840961286US. Date of Deposit: June 27, 2001. I hereby certify that this paper is being deposited with the U.S. Postal Service Express Mail Post Office to Addressee Service under 37 CFR 1.10 on the date shown above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Trish Paramore

Sir:

Transmitted herewith for filing is the patent application of:

Inventor(s): Gary Allan Kemp II, et al

For: **CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH**

Enclosed are:

__6__ sheets of informal drawings and 32 pages of Specification (including Abstract)
_____ A Declaration/Power of Attorney
__X__ Small Entity Status claimed under 37 CFR 1.27

This application is a Divisional of Serial No. 09/590,692 entitled **CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH**, filed June 09, 2000.

FEE CALCULATION					FEE
	NUMBER		NUMBER EXTRA	RATE	BASIC FEE $ 355.00
Total Claims	21	20 =	1	X $9 =	$ 9.00
Independent Claims	3	- 3 =		X $40 =	
				Total Filing Fee	$364.00

A check in the amount of $ 364.00 is enclosed.

All correspondence related to this application may be addressed to the undersigned at Jackson Walker L.L.P, 2435 North Central Expressway, Suite 600, Richardson, Texas 75080.

June 27, 2001
Date

Robert C. Klinger
Registration No. 34,365

06-29-01

A

Please type a plus sign (+) inside ox → +

PTO/SB/05 (11-00)

Approved for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No.	120048-00003
First Inventor	Gary Allan Kamp II, et al
Title	CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH
Express Mail Label No.	EL 840961286US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. ☒ Applicant claims small entity status. See 37 CFR 1.27.
3. ☒ Specification [*Total Pages* 32]
   (preferred arrangement set forth below)
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table, or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
4. ☒ Drawing(s) (*35 U.S.C.113*) [*Total Sheets* 8]
5. Oath or Declaration [*Total Pages*]
   a. ☐ Newly executed (original or copy)
   b. ☒ Copy from a prior application (37 CFR 1.63 (d))
   (for a continuation/divisional with Box 18 completed)
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

ACCOMPANYING APPLICATIONS PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R.§3.73(b) Statement ☐ Power of Attorney *(when there is an assignee)*
11. ☐ English Translation Document *(if applicable)*
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☒ Preliminary Amendment
14. ☐ Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. ☐ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Request and Certification under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☒ Divisional ☐ Continuation-in-part (CIP) of prior application No: 09 / 590,692

Prior application information: *Examiner* Rich Weisberger *Group / Art Unit:* 2164

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

☒ *Customer Number or Bar Code Label* 25555 *(Insert Customer No. or Attach bar code label here)* or ☐ *Correspondence address below*

Name					
Address					
City		*State*		*Zip Code*	
Country		*Telephone*		*Fax*	

Name (Print/Type)	Robert C. Klinger	*Registration No. (Attorney/Agent)*	34,385
Signature		*Date*	June 27, 2001

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

JWDOCS 2678917v1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Applicant: Gary Allan Kemp II, et al

Serial No.: ****

Filing Date: *HEREWITH*

Docket No.: 120046-00003

PRELIMINARY AMENDMENT

June 27, 2001

Assistant Commissioner for Patents
Washington, D.C. 20231

MAILING CERTIFICATE UNDER 37 C.F.R. §1.8(A)
I hereby certify that the above correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on June 27, 2001.

Trish Paramore

Dear Sir:

Prior to the Examination of the above referenced Divisional patent application, please delete Claims 22-40. If there are any additional questions, please contact the undersigned attorney.

Respectfully submitted,

Robert C. Klinger
Reg. No. 34,365

Robert C. Klinger
Jackson Walker L.L.P.
2435 North Central Expressway, Suite 600
Richardson, Texas 75080
Phone: (972) 744-2900
Fax: (972) 744-2909

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 024051/0155

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Appl. No.: 09/894,637

Filing Date: 06/27/2001

Examiner: R. Weisberger

Art Unit: 3624

AMENDMENT TRANSMITTAL

Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith is an amendment in the above-identified application.

[X] Small Entity status under 37 C.F.R. § 1.9 and § 1.27 has been established by a Small Entity statement previously submitted.

[ ] Small Entity statement is enclosed.

[X] The fee required for additional claims is calculated below:

	Claims as Amended		Previously Paid For		Extra Claims Present		Rate		Additional Claims Fee
Total Claims:	28	–	21	=	7	x	$18.00	=	$126.00
Independents:	2	–	3	=	0	x	$84.00	=	$0.00
First presentation of any Multiple Dependent Claims:						+	$280.00	=	$0.00
							CLAIMS FEE TOTAL:	=	$126.00
							Small Entity Fees Apply (subtract ½ of above):		$63.00
							TOTAL FEE:		$63.00

[X] A check in the amount of $63.00 is enclosed.

[X] The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Please direct all correspondence to the undersigned attorney or agent at the address indicated below.

Respectfully submitted,

Date SEPT. 26, 2002

By _____

Ankur D. Shah
Attorney for Applicant
Registration No. 41,514

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5143
Telephone: (202) 672-5300
Facsimile: (202) 672-5399

05/26/2004 WILLIAM 00000002 190741 09894637
01 FC:1202 126.00 DA

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/894,637	06/27/2001	Gary Allan Kemp II	120046-00003

CONFIRMATION NO. 1527

FORMALITIES LETTER

OC000000006348497

Robert C. Klinger
Jackson Walker L.L.P.
Suite 600
2435 North Central Expressway
Richardson, TX 75080

Date Mailed: 07/26/2001

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

This application has been accorded an Application Number and Filing Date. The application, however, is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a)

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202
PART 3 - OFFICE COPY

0360

OIPE JC152
SEP 07 2001
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO. 024051-0155

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Appl. No.: 09/894,637

Filing Date: 06/27/2001

Examiner: Unassigned

Art Unit: 2164

TRANSMITTAL OF CORRECTED APPLICATION PAPERS

Commissioner for Patents
Washington, D.C. 20231

Attn: BOX MISSING PARTS

Sir:

In response to the Notice to File Corrected Application Papers mailed on July 26, 2001, in the above-identified application, transmitted herewith are the missing documents needed to complete the filing of the subject patent application. Enclosed are:

[X] Formal Drawings (6 Sheets, Figures 1-6).

[X] Petition to Make Special Under 37 C.F.R. §1.102(d) and Statement by Applicant.

[X] Information Disclosure Statement.

[X] Form PTO-1449.

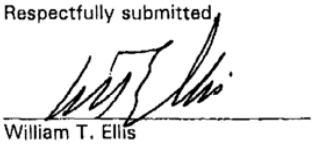
[X] Copy of Notice to File Corrected Application Papers.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed

Appl. No. 09/894,637

herewith, as by a check being in the wrong amount, unsigned; post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,



September 7, 2001
Date

William T. Ellis
Attorney for Applicant
Registration No. 26,874

FOLEY & LARDNER
3000 K Street, N.W.
Suite 500
Washington, D.C. 20007-5109
Telephone No.: (202) 672-5300

#3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO. 024051-0155

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Appl. No.: 09/894,637

Filing Date: 06/27/2001

Examiner: Unassigned

Art Unit: 2164

TRANSMITTAL OF FORMAL DRAWINGS

Commissioner for Patents
Washington, D.C. 20231

ATTENTION: DRAWING REVIEW BRANCH

Sir:

Transmitted herewith are the formal drawings (6 sheets, Figures 1-6) for the above-identified application. The Official Draftsperson is respectfully requested to approve these drawings for entry into the application.

Respectfully submitted,

September 7, 2001
Date

William T. Ellis
Attorney for Applicant
Registration No. 26,874

FOLEY & LARDNER
3000 K Street, N.W.
Suite 500
Washington, D.C. 20007-5109
Telephone No.: (202) 672-5300

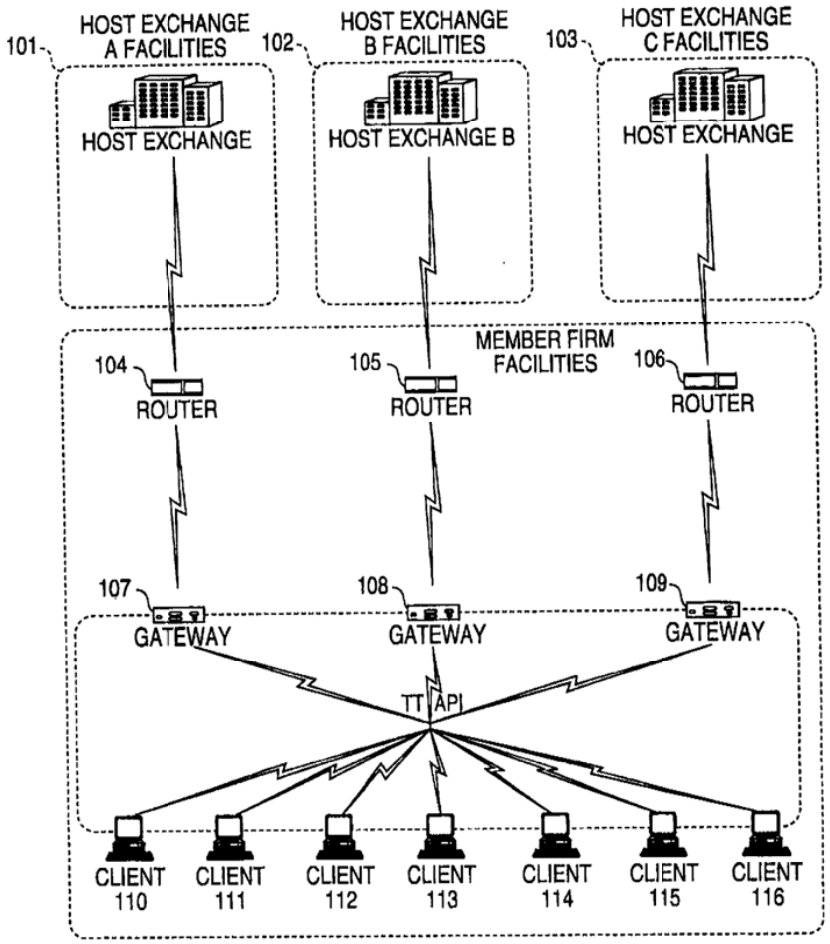
002.634697.1

6766304

6766304 07/27/2004

FIG. 1

CONNECTION TO MULTIPLE EXCHANGES



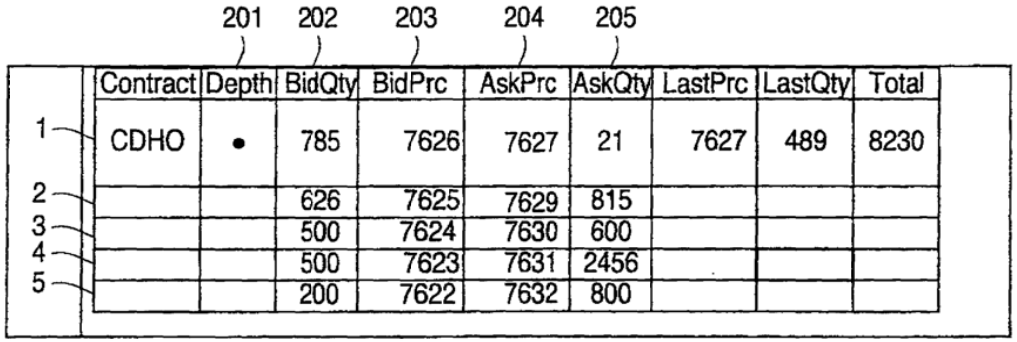
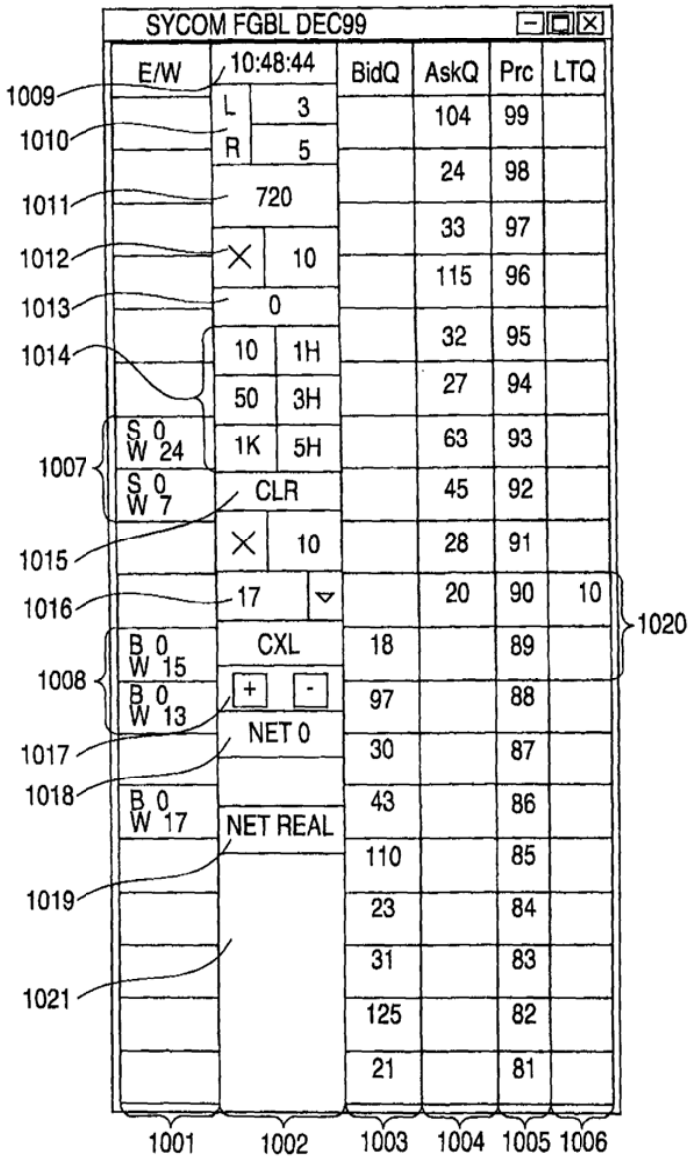


FIG. 2

	Contract	Depth (201)	BidQty (202)	BidPrc (203)	AskPrc (204)	AskQty (205)	LastPrc	LastQty	Total
1	CDHO	•	785	7626	7627	21	7627	489	8230
2			626	7625	7629	815			
3			500	7624	7630	600			
4			500	7623	7631	2456			
5			200	7622	7632	800			

Title: CLICK BASED TRADING WITH
INTUITIVE GRID DISPLAY OF
MARKET DEPTH
Inventor(s): Gary Alan KEMP II et al.
Appl. No.: 09/894,637

FIG. 3



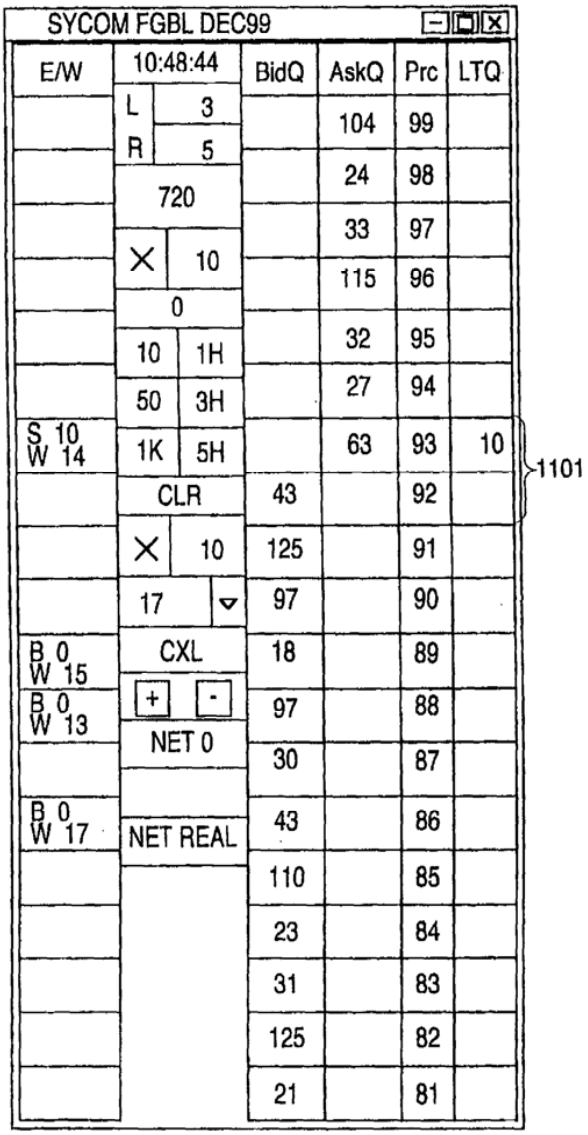
Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH
Inventor(s): Gary Alan KEMP II et al.
Appl. No.: 09/894,637

FIG. 4

SYCOM FGBL DEC99

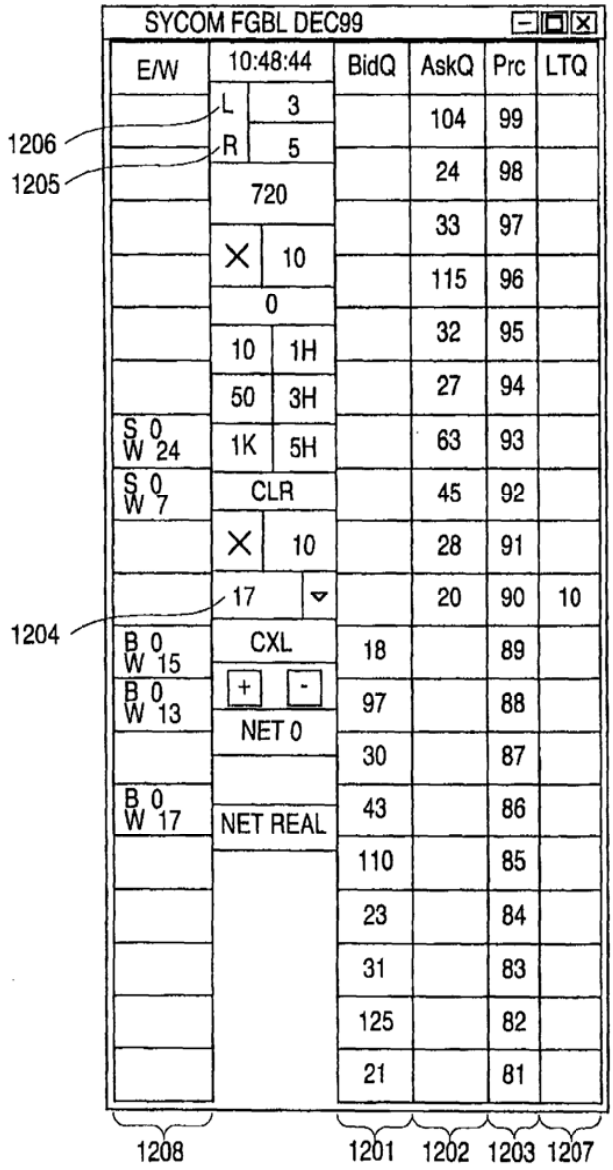
E/W	10:48:44	BidQ	AskQ	Prc	LTQ
	L 3		104	99	
	R 5		24	98	
	720		33	97	
	× 10		115	96	
	0		32	95	
	10 1H		27	94	
	50 3H		63	93	10
S 10 W 14	1K 5H				
	CLR	43		92	
	× 10	125		91	
	17 ▽	97		90	
B 0 W 15	CXL	18		89	
B 0 W 13	+ -	97		88	
	NET 0	30		87	
B 0 W 17	NET REAL	43		86	
		110		85	
		23		84	
		31		83	
		125		82	
		21		81	

1101



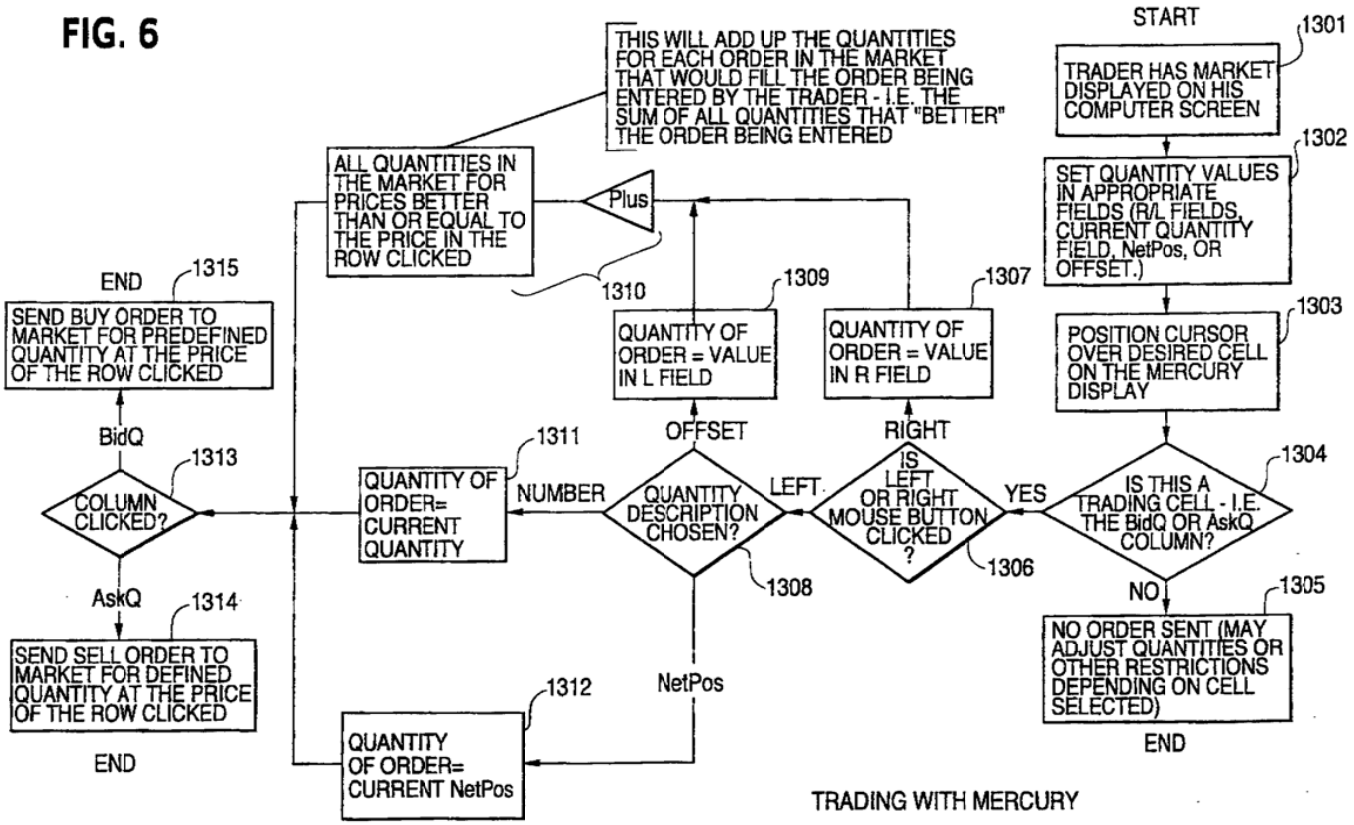
Title: CLICK BASED TRADING WITH
INTUITIVE GRID DISPLAY OF
MARKET DEPTH
Inventor(s): Gary Alan KEMP II et al.
Appl. No.: 09/894,637

FIG. 5



Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH
Inventor(s): Gary Alan KEMP II et al.
Appl. No.: 09/894,637

FIG. 6



TRADING WITH MERCURY

OIPE JC152
SEP 0 7 2001
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UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/894,637	06/27/2001	Gary Allan Kemp II	120046-00003

CONFIRMATION NO. 1527

FORMALITIES LETTER

OC000000006348497

Robert C. Klinger
Jackson Walker L.L.P.
Suite 600
2435 North Central Expressway
Richardson, TX 75080

Response due: Sept 26 2001

Date Mailed: 07/26/2001

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

This application has been accorded an Application Number and Filing Date. The application, however, is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a)

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 1 - ATTORNEY/APPLICANT COPY

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7/30/01

JUL 3 0 2001

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SEP 07 2001
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO. 024051-0155

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Serial No.: 09/894,637

Filed: 06/27/2001

Examiner: Unassigned

Art Unit: 2164

PETITION TO MAKE SPECIAL UNDER 37 CFR § 1.102(d) AND STATEMENT BY APPLICANT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Pursuant to 37 C.F.R. §1.102 and M.P.E.P. 708.02 II (INFRINGEMENT), Applicant hereby requests that the above-captioned application be granted special status and examined expeditiously.

Special status has been granted in the parent application (09/590,692) to the present divisional application. Applicant submits, in addition to the present Petition to Make Special, the requisite fee under 37 C.F.R. §1.17(i) and a statement alleging the following under lettered headings that correspond with the lettered paragraphs of M.P.E.P. 708.02 II.

STATEMENT BY APPLICANT

Applicant hereby states as follows:

(A) Infringing Products on the Market

That there is an infringing device or product actually on the market or method in use.

(B) Comparison and Infringement

That Applicant has made a rigid comparison of the infringing device, product or method with the claims of the present application, and that, in its opinion, some of the claims are unquestionably infringed.

(C) Pre-Examination Search

A careful and thorough search of the prior art was conducted by a professional patent search firm. The search was conducted in the following areas of classification: Class 340, Subclass 825.27, Class 705, Subclasses 35-37. In addition, a key word search was performed on the U.S. Patent and Trademark Office Automated Patent System (APS) computer database.

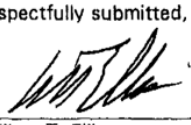
Applicant has submitted, in the above-mentioned parent application, a copy of each of the references deemed most closely related to the subject matter encompassed by the claims of the present divisional application. A list of these references has also been submitted via an Information Disclosure Statement filed in the present application. Accordingly, the relevant references are already of record.

Further, Applicant hereby states that if all claims presented are not obviously directed to a single invention, that Applicant will make an election without traverse in response to an Examiner's telephone request.

Applicant's undersigned representative makes the aforementioned statement on behalf of Applicant.

Inasmuch as all of the requirements for special status under M.P.E.P. 708.02 II have been met, it is respectfully requested that the application be granted special status, and be examined expeditiously.

Respectfully submitted,



September 7, 2001
Date

William T. Ellis
Attorney for Applicant
Registration No. 26,874

FOLEY & LARDNER
3000 K Street, N.W.
Suite 500
Washington, D.C. 20007-5109
Telephone No.: (202) 672-5300

#5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO. 024051-0155

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Serial No.: 09/894,637

Filed: 06/27/2001

Examiner: Unassigned

Art Unit: 2164

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants submit herewith on Form PTO-1449 a listing of the documents cited by or submitted to the United States Patent & Trademark Office in the parent application Serial No. 09/590,692, filed June 9, 2000. As provided in 37 CFR §1.98(d), copies of the documents are not being provided since they were previously submitted to the United States Patent & Trademark Office in the above-identified parent application.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), within three (3) months of the filing date of the application.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English. Documents A1-A9 were submitted to the USPTO by Applicant in the parent application. Documents A10 and A11 were cited by the Examiner via form PTO-892 in the parent application and the listings are copied therefrom.

Applicants respectfully request that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO-1449 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

September 7, 2001
Date

William T. Ellis
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PATENT & TRADEMARK OFFICE

SHEET 1 of 1

FORM PTO 1449 (*modified*) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO. 024051/0155	SERIAL NO. 09/894,637
LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)	APPLICANT: Gary Alan KEMP II, et al.	
Date Submitted to PTO: September 7, 2001	FILING DATE: June 27, 2001	GROUP: Unassigned

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A1	4,674,044	06/16/87	KALMUS et al.	364	408	
	A2	4,750,135	06/07/88	BOILEN	364	514	
	A3	5,270,922	12/14/93	HIGGINS	364	408	
	A4	5,297,032	03/22/94	TROJAN et al.	364	408	
	A5	5,924,083	07/13/99	SILVERMAN et al.	705	37	
	A6	6,014,643	01/11/00	MINTON	705	37	
	A7	5,077,665	12/31/91	SILVERMAN et al.	364	408	
	A8	5,136,501	08/08/92	SILVERMAN et al.	364	408	
	A9	5,963,923	10/05/99	GARBER	705	37	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	A10	www.tradingtechnologies.com/products/xtrade_full.html (viewed 5/22/2001) < 6/9/2000
	A11	Kharouf, A trading room with a view, Fututes, 27, 11 – 11/1998

EXAMINER _____ DATE CONSIDERED 3/06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 024051/0155

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Serial No.: 09/894,637

Filed: June 27, 2001

Examiner: Unassigned

Art Unit: 2164

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GROUP 3600

ASSOCIATE POWER OF ATTORNEY

RECEIVED
AUG 2 0 2002
Technology Center 2100

Commissioner for Patents
Washington, D.C. 20231

Sir:

The undersigned attorney of record hereby grants

Steven F. Borsand, Reg. No. 36,752,
Mark W. Triplett, Reg. 49,002, and
Monika Dudek, Reg. No. 47,538

an associate power, with full powers of substitution and revocation, to prosecute the above-identified application and transact all business in the Patent and Trademark Office connected therewith.

Respectfully submitted,

August 16, 2002
Date

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Atty. Dkt. No. 024051-0155

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gary Alan KEMP II et al.

Title: CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH

Appl. No.: 09/894,637

Filing Date: 06/27/2001

Examiner: R. Weisberger

Art Unit: 3624

Lorraine H 7/a 9/30/02

AMENDMENT

Commissioner for Patents
Box NON-FEE AMENDMENT
Washington, D.C. 20231

Sir:

Please amend this application as set forth below and consider the accompanying remarks.

In the Specification:

Please amend the specification as follows:

Page 8, delete paragraph starting at line 24, and replace this paragraph with the following in accordance with 37 CFR § 1.121. A marked up version showing the changes in the specification is attached.

-- Figure 2 illustrates a screen display of an invention described in a commonly owned co-pending application entitled "Click Based Trading with Market Depth Display" serial no. 09/589,751, filed on June 9, 2000, the contents of which are incorporated herein by reference. This display shows the inside market and the market depth of a given commodity being traded. Row 1 represents the "inside market" for the commodity being traded which is the best (highest) bid price and quantity and the best (lowest) ask price and quantity. Rows 2-5 represent the "market depth" for the commodity being traded. In the preferred embodiment of the present invention, the

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display of market depth (rows 2-5) lists the available next-best bids, in column 203, and asks, in column 204. The working bid and ask quantity for each price level is also displayed in columns 202 and 205 respectively (inside market - row 1). Prices and quantities for the inside market and market depth update dynamically on a real time basis as such information is relayed from the market.--

Page 13, delete paragraph starting at line 13, and replace this paragraph with the following in accordance with 37 CFR § 1.121. A marked up version showing the changes in the specification is attached.

-- The values in the price column are static; that is, they do not normally change positions unless a re-centering command is received (discussed in detail later). The values in the Bid and Ask columns however, are dynamic; that is, they move up and down (in the vertical example) to reflect the market depth for the given commodity. The LTQ column 1006 shows the last traded quantity of the commodity. The relative position of the quantity value with respect to the Price values reflects the price at which that quantity was traded. Column 1001 labeled E/W (entered/working) displays the current status of the trader's orders. The status of each order is displayed in the price row where it was entered. For example, in cells 1007, the number next to S indicates the number of the trader's ordered lots that have been sold at the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not been filled - i.e. the system is working on filling the order. Blanks in this column indicate that no orders are entered or working at that price. In cells 1008, the number next to B indicates the number of the trader's ordered lots that have been bought at the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not been filled - i.e. the system is working on filling the order.

Page 17, delete paragraph starting at line 10, and replace this paragraph with the following in accordance with 37 CFR § 1.121. A marked up version showing the changes in the specification is attached.

-- Using the screen display and values from Figure 5, the placement of trade orders using the Mercury display and trading method is now described using examples. A left click on the 18 in the BidQ column 1201 will send an order to market to buy 17 lots (quantity # chosen on the Quantity Description pull down menu cell 1204) of the commodity at a price of 89 (the corresponding price in the Prc column 1203). Similarly, a left click on the 20 in the AskQ column 1202 will send an order to market to sell 17 lots at a price of 90.--

In the Claims:

Please cancel claims 1-21 without prejudice or disclaimer.

Please add the following new claims:

41. (New) A method for displaying market information relating to a commodity being traded in a market having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:

dynamically displaying a first indicator in one of a plurality of locations in a bid display region in association with price levels along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

dynamically displaying a second indicator in one of a plurality of locations in an ask display region in association with the price levels along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market; and

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that the first and second indicators can move in the bid and ask display regions relative to the common static price axis when the inside market changes.

42. (New) The method of claim 41 wherein the bid and ask display regions comprise columns with a plurality of cells that are displayed as a grid such that the cells of each column are aligned.

43. (New) The method of claim 41 wherein the bid and ask display regions are oriented vertically.

44. (New) The method of claim 41 wherein the bid and ask display regions are oriented horizontally.

45. (New) The method of claim 41 wherein one of the plurality of locations of the bid display region comprises a blank region in which there is no first indicator displayed.

46. (New) The method of claim 41 wherein one of the plurality of locations of the ask display region comprises a blank region in which there is no first indicator displayed.

47. (New) The method of claim 41 further comprising the step of displaying at least a portion of the common static price axis in a price display region.

48. (New) The method of claim 47 wherein the bid display region, the ask display region, and the price display region comprise columns with a plurality of cells that are displayed as a grid such that the cells of each column are aligned.

49. (New) The method of claim 47 wherein the bid display region, the ask display region, and the price display region are oriented vertically.

50. (New) The method of claim 47 wherein the bid display region, the ask display region, and the price display region are oriented horizontally.

51. (New) The method of claim 41 further comprising the steps of:

dynamically displaying a third indicator at one of the plurality of locations in the bid display region, the third indicator representing quantity associated with at least one order to buy the commodity at a price different than the highest bid price currently available in the market; and

dynamically displaying a fourth indicator at one of the plurality of locations in the ask display region, the fourth indicator representing quantity associated with at least one order to sell the commodity at a price different than the lowest ask price currently available in the market.

52. (New) The method of claim 51 wherein one of the plurality of locations of the bid display region comprises a blank region in which there is no first or third indicator displayed.

53. (New) The method of claim 41 wherein one of the plurality of locations of the ask display region comprises a blank region in which there is no second or fourth indicator displayed.

54. (New) The method of claim 41 further comprising the steps of:

displaying a bid order entry region comprising a plurality of locations for receiving commands to send buy orders; and

displaying an ask order entry region comprising a plurality of locations for receiving commands to send sell orders.

55. (New) The method of claim 54 wherein the bid and ask order entry regions are displayed in association with the common static price axis such that each of the plurality of locations for receiving commands is associated with a price level on the common static price axis.

56. (New) The method of claim 54 wherein the bid order entry region comprises the bid display region and the ask order entry region comprises the ask display region.

57. (New) The method of claim 41 further comprising dynamically displaying an entered order indicator in association with the price levels arranged along the common static price axis.

58. (New) The method of claim 57 wherein the entered order indicator is displayed in an entered order region.

59. (New) The method of claim 41 further comprising dynamically displaying a last trade indicator in association with the common static price axis.

60. (New) The method of claim 59 wherein the last trade indicator is displayed in a last trade region.

61. (New) The method of claim 41 further comprising the steps of:

displaying the first indicator at a first location associated with a first price level on the common static price axis at a first time; and

updating the display to display the first indicator at a second location associated with a different price level on the common static price axis at a second time subsequent to the first time.

62. (New) The method of claim 41 further comprising the steps of:

displaying the second indicator at a first location associated with a first price level on the common static price axis at a first time; and

updating the display to display the second indicator at a second location associated with a different price level on the common static price axis at a second time subsequent to the first time.

63. (New) The method of claim 41 further comprising the steps of:

displaying the first indicator at a first location associated with a particular price level on the common static price axis; and

repositioning the common static price axis such that the first indicator is displayed at a second location associated with the particular price level on the common static price axis.

64. (New) The method of claim 41 further comprising the steps of:

displaying the second indicator at a first location associated with a particular price level on the common static price axis; and

repositioning the common static price axis such that the second indicator is displayed at a second location associated with the particular price level on the common static price axis.

65. (New) The method of claim 41 wherein the bid and ask display regions are displayed in different colors.

66. (New) The method of claim 41 wherein the first and second indicators are displayed in different colors.

67. (New) The method of claim 41 wherein the bid and ask display regions are displayed in a window further comprising centering the display of the first and second indicators in the window upon receipt of a centering instruction.

68. (New) A computer readable medium having program code recorded thereon for execution on a computer for displaying market information relating to a commodity being traded in a market having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the program code causing a machine to perform the following method steps:

dynamically displaying a first indicator in one of a plurality of locations in a bid display region in association with price levels along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

dynamically displaying a second indicator in one of a plurality of locations in an ask display region in association with the price levels along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that the first and second indicators can move in the bid and ask display regions relative to the common static price axis when the inside market changes.

REMARKS

Claims 1-21 were pending in the present application. By way of this amendment, claims 1-21 have been cancelled without prejudice or disclaimer and claims 41-68 have been added. These new claims are directed to a particular aspect of the invention. The specification has been amended editorially to correct typographical errors and to reiterate changes made in the parent application. No new matter has been introduced. Accordingly, claims 41-68 are pending for consideration.

Applicant appreciates the courtesies extended by the Examiner during an interview conducted on September 18, 2002 and continued in a telephone conversation on September 25, 2002. These discussions resulted in an agreement that the new claims are allowable. Accordingly, the claims are believed to be in condition for allowance and early notification of the same is earnestly solicited.

As discussed with the Examiner, the new claims are directed to a method of dynamically displaying market information relative to a static price axis. Independent claims 41 and 68 provide for the display of indicators relating to the inside market relative to a common static price axis. These claims do not require the display of indicators relating to additional market depth. Dependent claim 51 further requires the display of indicators relating to additional orders in the market (e.g., additional market depth outside of the inside market). The other dependent claims further define various embodiments of the invention.

As discussed with the Examiner, Applicant intends on pursuing claims 1-21 and possibly other claims in one or more continuation applications. There has been no prior art cited that would preclude the patentability of claims 1-21. As discussed with the Examiner, Applicant cancelled these claims without prejudice and decided to pursue the new claims to expedite the allowance of this application.

Based on Applicant's discussions with the Examiner and in view of the foregoing amendments, Applicant believes that the present application is in condition for allowance. Favorable consideration of the application as amended is respectfully requested. Should there be any questions or concerns regarding the present application, the Examiner is invited to contact Applicant's undersigned representative by telephone.

Respectfully submitted,

Date SEPT. 26, 2002 By [signature]

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Should additional [illegible] petition for extension [illegible] hereby authorized to charge [illegible] and applicant(s) hereby petition for any needed extension [illegible]

Atty. Dkt. No. 024051-0155

MARKED UP VERSION SHOWING CHANGES MADE

Below are the marked up replacement paragraph(s):

Page 8, paragraph starting at line 24...

Figure 2 illustrates a screen display of an invention described in a commonly owned co-pending application entitled "Click Based Trading with Market Depth Display" serial no. [_____] 09/589,751, filed on [_____] June 9, 2000, the contents of which are incorporated herein by reference. This display shows the inside market and the market depth of a given commodity being traded. Row 1 represents the "inside market" for the commodity being traded which is the best (highest) bid price and quantity and the best (lowest) ask price and quantity. Rows 2-5 represent the "market depth" for the commodity being traded. In the preferred embodiment of the present invention, the display of market depth (rows 2-5) lists the available next-best bids, in column 203, and asks, in column 204. The working bid and ask quantity for each price level is also displayed in columns 202 and 205 respectively (inside market - row 1). Prices and quantities for the inside market and market depth update dynamically on a real time basis as such information is relayed from the market.

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the market, but have not been filled - i.e. the system is working on filling the order. Blanks in this column indicate that no orders are entered or working at that price. In cells 1008, the number next to B indicates the number of the trader's ordered lots that have been bought at the price in the specific row. The number next to W indicates the number of the trader's ordered lots that are in the market, but have not been filled - i.e. the system is working on filling the order.

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File History Report

☒ Paper number **8** is missing from the United States Patent and Trademark Office's original copy of the file history. No additional information is available.

☐ The following page(s) _____ of paper number _____ is/are missing from the United States Patent and Trademark Office's original copy of the file history. No additional information is available

Additional comments: _____