

(12) **United States Patent**
Gary

(10) **Patent No.:** **US 6,618,707 B1**
 (45) **Date of Patent:** **Sep. 9, 2003**

(54) **AUTOMATED EXCHANGE FOR TRADING
 DERIVATIVE SECURITIES**

(75) Inventor: **Katz Gary**, Plainview, NY (US)

(73) Assignee: **International Securities Exchange,
 Inc.**, New York, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/433,613**

(22) Filed: **Nov. 2, 1999**

Related U.S. Application Data

(60) Provisional application No. 60/106,935, filed on Nov. 3, 1998.

(51) **Int. Cl.**⁷ **G06F 17/60**

(52) **U.S. Cl.** **705/37; 705/36**

(58) **Field of Search** **705/37, 36, 26**

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,573,747	A	4/1971	Adams et al.	340/172.5
3,581,072	A	5/1971	Nymeyer	235/152
4,412,287	A	10/1983	Braddock, III	364/408
4,674,044	A	6/1987	Kalmus et al.	364/408
4,903,201	A	2/1990	Wagner	364/408
4,980,826	A	12/1990	Wagner	364/408
5,101,353	A	3/1992	Lupien et al.	364/408
5,136,501	A	8/1992	Silverman et al.	364/408
5,297,032	A	3/1994	Trojan et al.	364/408
5,305,200	A	4/1994	Hartheimer et al.	364/408
5,664,115	A	9/1997	Fraser	705/37
5,689,652	A	11/1997	Lupien et al.	395/237
5,715,402	A	2/1998	Popolo	395/237
5,787,402	A	7/1998	Potter et al.	705/37
5,905,974	A	5/1999	Fraser et al.	705/37
5,913,202	A	6/1999	Motoyama	705/35
5,924,082	A	7/1999	Silverman et al.	705/37
5,946,666	A *	8/1999	Nevo et al.	705/36
5,970,479	A	10/1999	Shepherd	705/37
5,978,779	A	11/1999	Stein et al.	705/37

6,014,643	A *	1/2000	Minton	705/37
6,016,483	A *	1/2000	Rickard et al.	705/37
6,035,288	A	3/2000	Solomon	705/37
6,076,068	A	6/2000	DeLapa et al.	705/14
6,112,189	A *	8/2000	Rickard et al.	705/37

FOREIGN PATENT DOCUMENTS

WO	WO 93/15467	8/1993
WO	WO 97/42591	11/1997
WO	WO 98/38844	9/1998

OTHER PUBLICATIONS

Management Science, vol. 43, No. 12, Dec. 1997, Eric K. Clemons, Information Technology and Screen-Based Securities Trading.

Wall Street & Technology, vol. 15, No. 3, Mar. 1997, Schmerken, Ivy, "The Pandora's Box over Autoquotes."

How is a Trade Executed-Limit Order. Printed from the Nasdaq Web Page on Mar. 7, 2000.

(List continued on next page.)

Primary Examiner—Eric W. Stamber

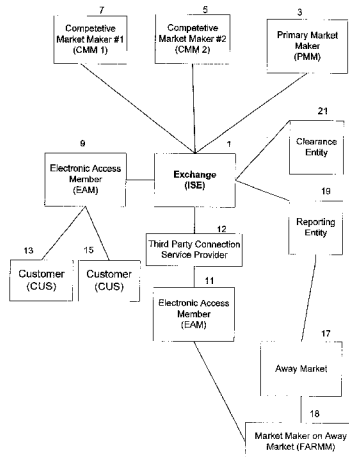
Assistant Examiner—John Leonard Young

(74) *Attorney, Agent, or Firm*—Stephen J. Lieb; Frommer, Lawrence & Haug LLP

(57) **ABSTRACT**

An automated exchange is provided for matching incoming orders for the purchase or sale of financial instruments, such as options contracts, with previously received orders. The exchange allocates the matching of orders first to fill customer orders and then to fill professional orders on a pro rata basis. A primary market maker is given preference over other market professionals. Market professionals that enter larger orders into the book receive a proportionally larger portion of the incoming order. The exchange automatically maintains a minimum size by deriving orders for professionals across a range of prices when orders at the market price are exhausted. The exchange automatically derives orders for professionals to join with market-improving orders when the market-improving orders are less than the minimum market size.

75 Claims, 23 Drawing Sheets



OTHER PUBLICATIONS

How is a Trade Executed—Market Order. Printed from the Nasdaq Web Page on Mar. 7, 2000.

Cosgrove, Suzanne. Courting Retail, Institutional Customers, CBOE, AMEX Get Creative. Knight—Ridder Financial News, Jan. 29, 1993.

Michaels, George. Distributed Electronic Ordering System, financial software from Financial Technology Corp. Wall Street Computer Review, Vol 8, No. 11, pp. 53—55.

Amihus et al. Liquidity, Asset Prices and Financial Policy. Financial Analysts Journal, vol. 47, No. 6, pp. 56—66.

Actualidad Economica: Free—For All In Electricity Sector? Dialog Article, p. 18, Sep. 30, 1996.

Souter, Gavin. Bermuda's Reinsurers Eager to Please, Dialog Article, Business Insurance, vol. 28, No. 44, p. 77, Oct. 31, 1994.

Guardian, UK: Branch Closures Hit Poorer Customers, Dialog Article, p. 18 Feb. 11, 1997.

* cited by examiner

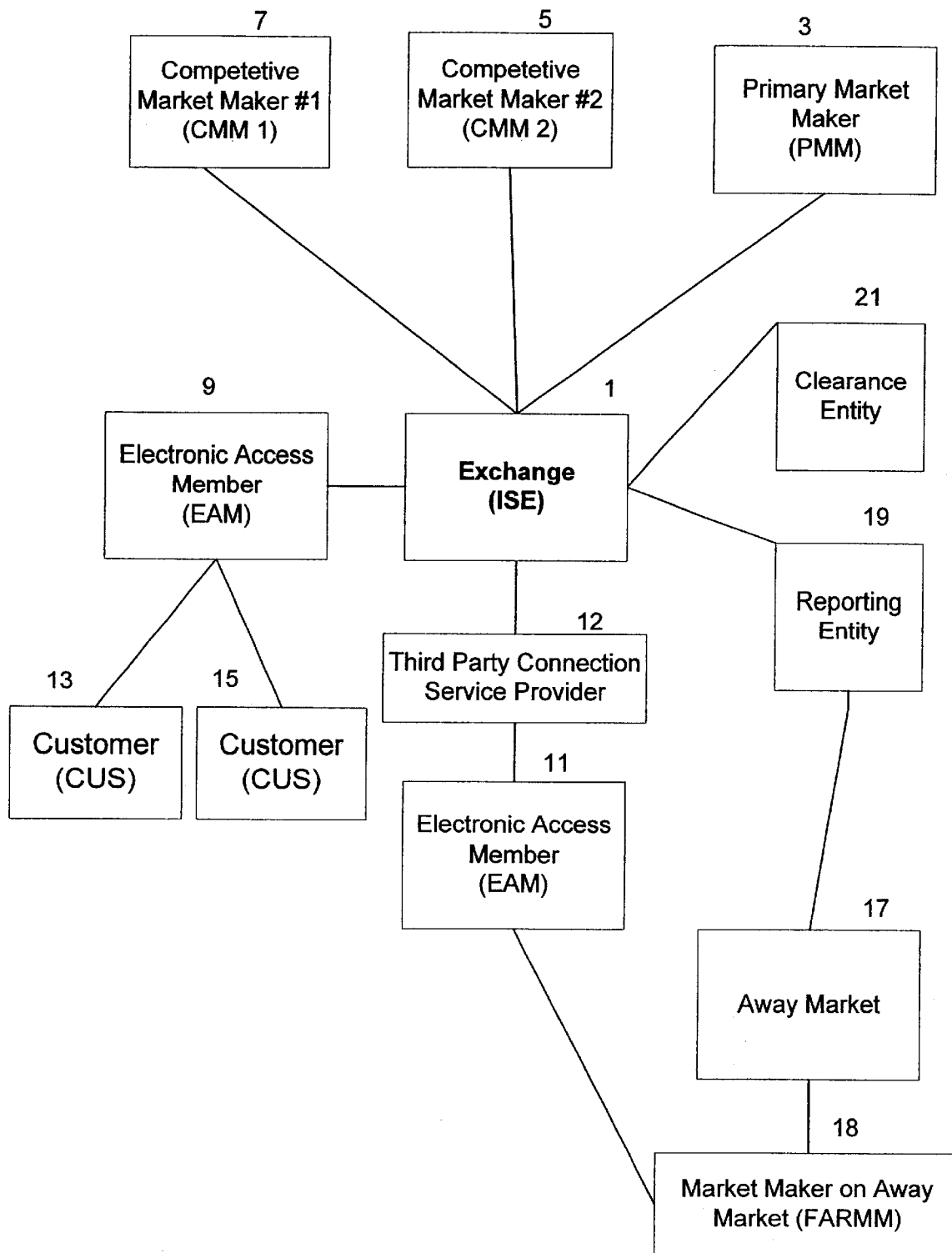


FIG. 1

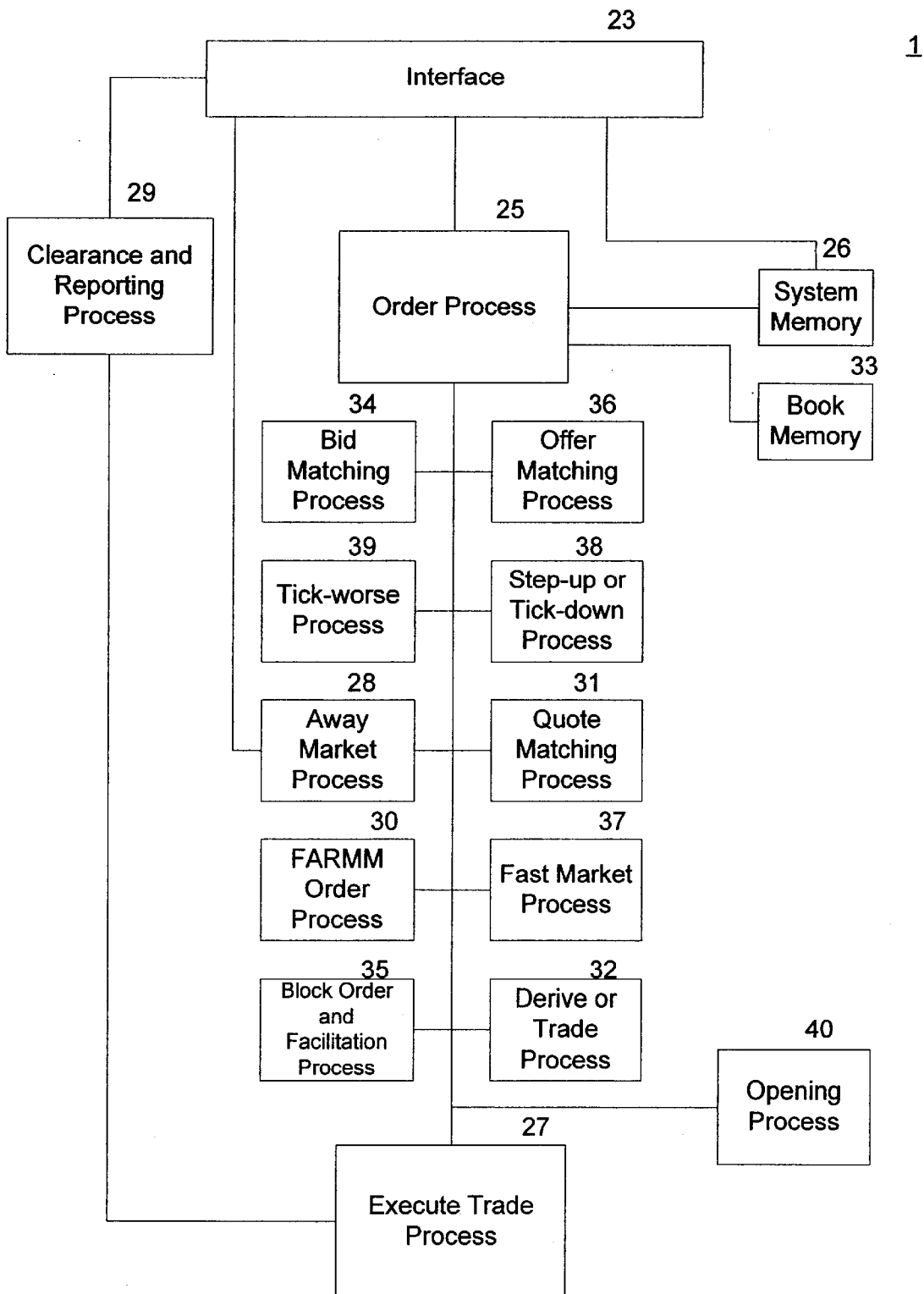


FIG. 2

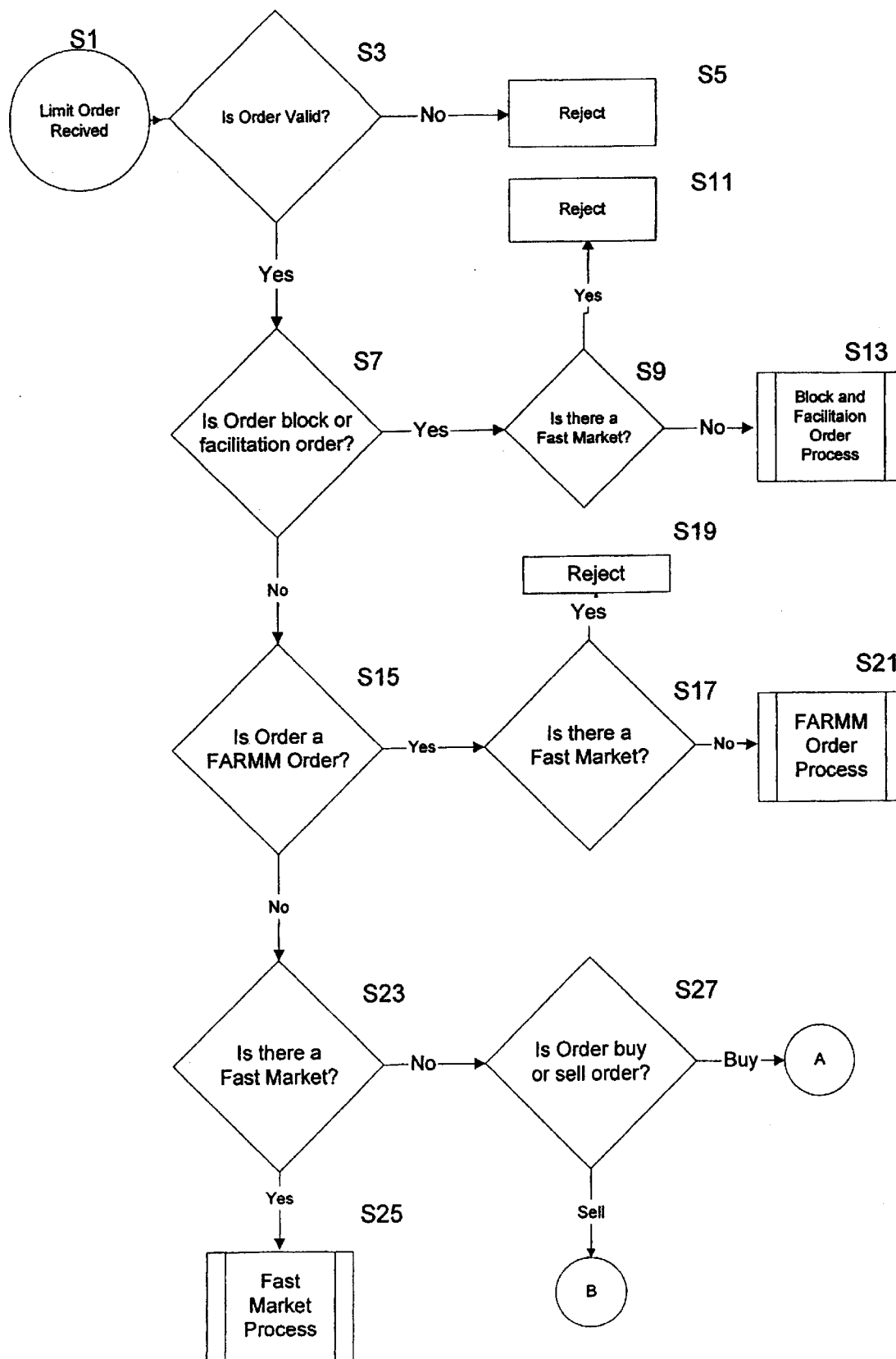


FIG. 3(a)

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.