

(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**

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(*) 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.)

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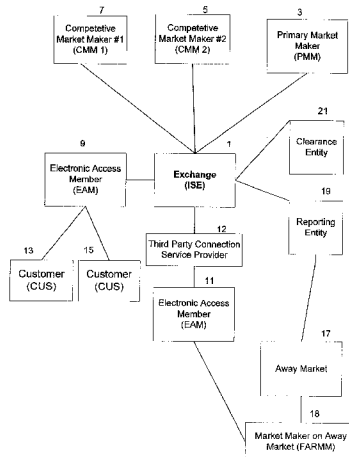
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(57) **ABSTRACT**

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

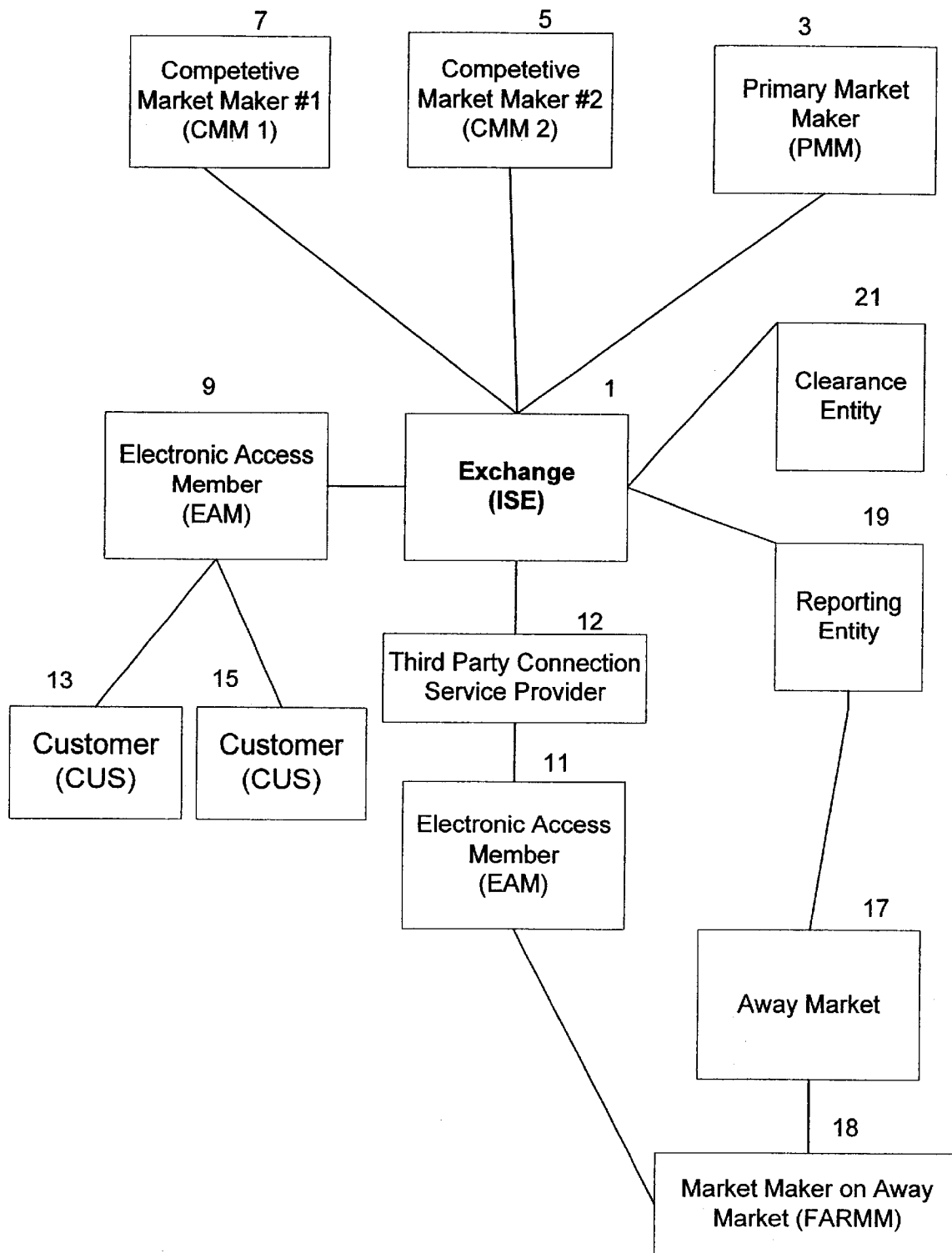


FIG. 1

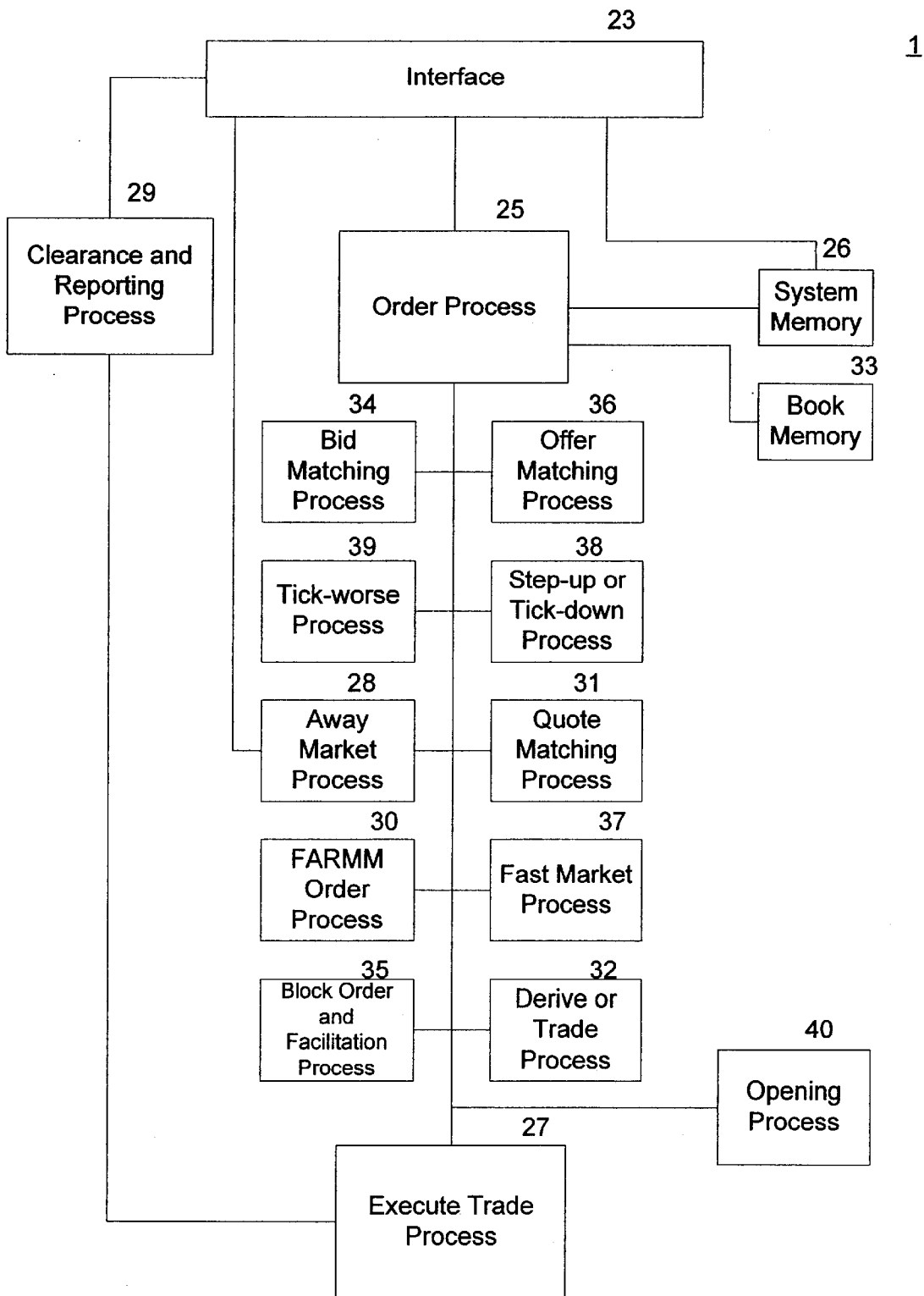


FIG. 2

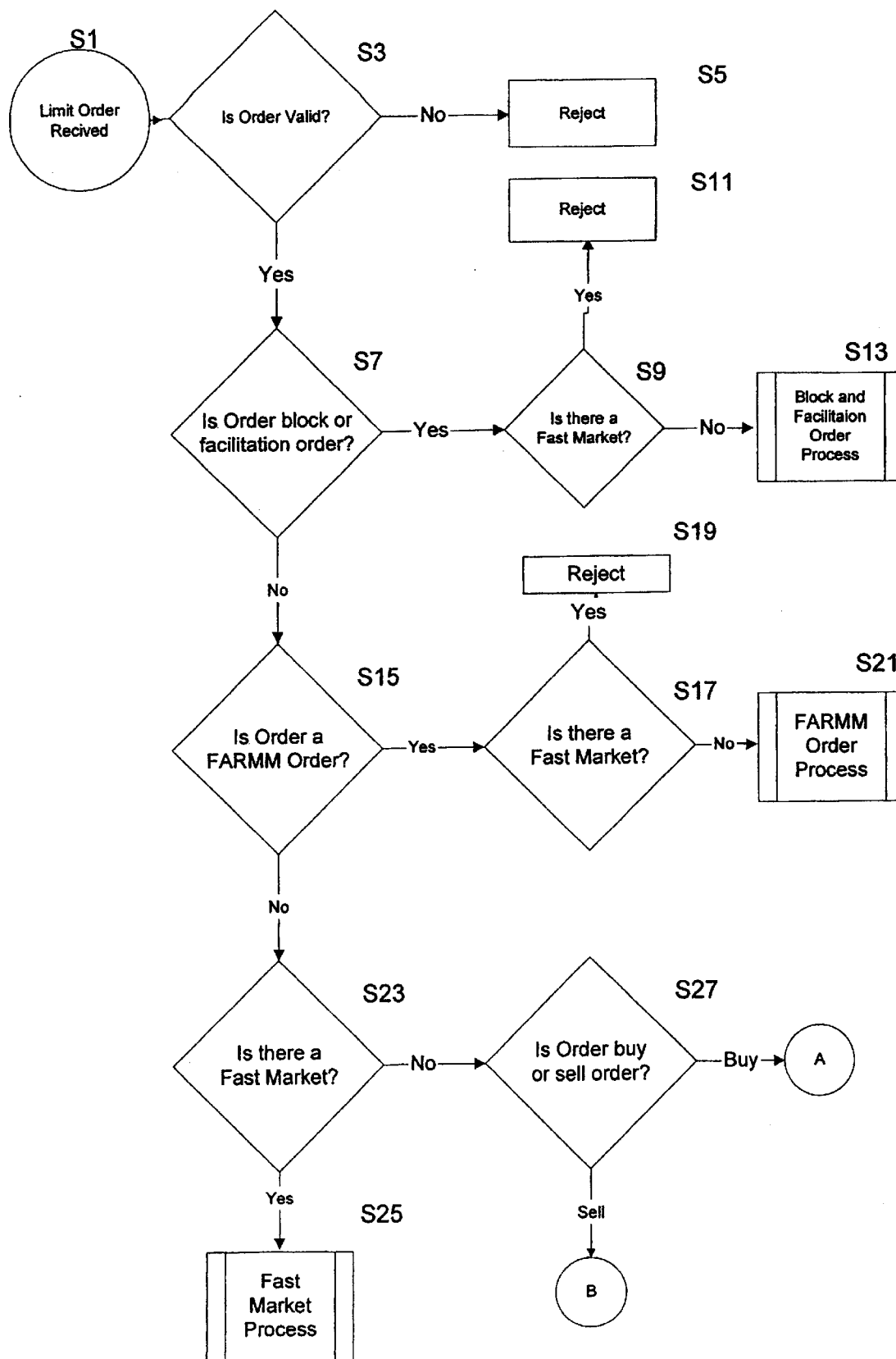


FIG. 3(a)

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