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

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

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

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(51) **Int. Cl.^{7}** **G06F 17/60**
(52) **U.S. Cl.** **705/37**; 705/36
(58) **Field of Search** 705/37, 36, 26

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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
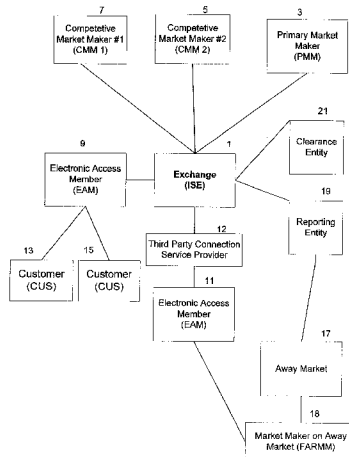
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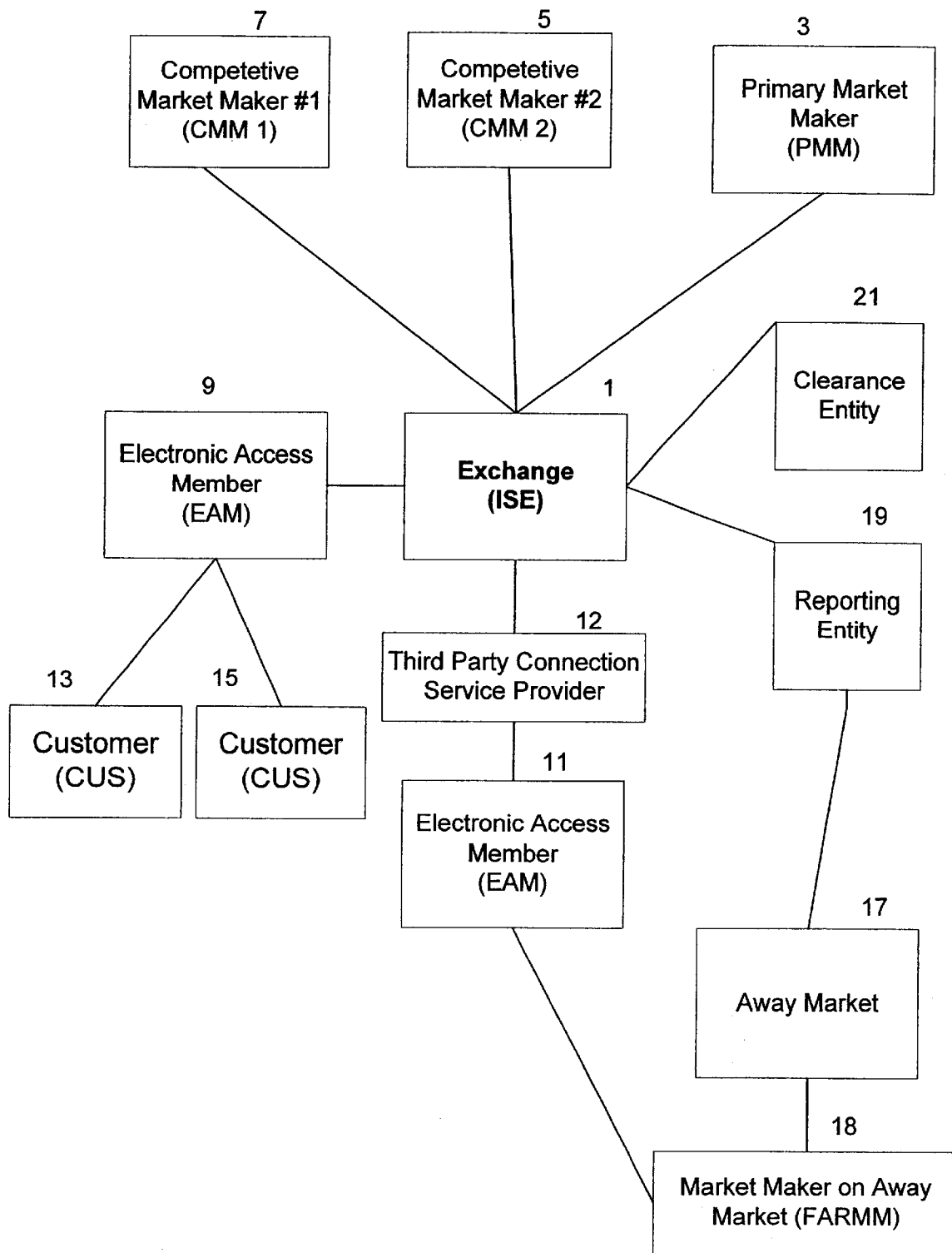
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FIG. 1

23

Interface

1

29

Clearance and
Reporting
Process

25

Order Process

26

System
Memory

33

Book
Memory

34

Bid
Matching
Process

36

Offer
Matching
Process

39

Tick-worse
Process

38

Step-up or
Tick-down
Process

28

Away
Market
Process

31

Quote
Matching
Process

30

FARMM
Order
Process

37

Fast Market
Process

35

Block Order
and
Facilitation
Process

32

Derive or
Trade
Process

40

Opening
Process

27

Execute Trade
Process

FIG. 2

S1 — Limit Order Recived

S3 — Is Order Valid? — No → **S5** Reject

Yes ↓

S7 — Is Order block or facilitation order? — Yes → **S9** Is there a Fast Market?

S9 — Is there a Fast Market? — Yes → **S11** Reject

S9 — Is there a Fast Market? — No → **S13** Block and Facilitaion Order Process

No ↓ (from S7)

S15 — Is Order a FARMM Order? — Yes → **S17** Is there a Fast Market?

S17 — Is there a Fast Market? — Yes → **S19** Reject

S17 — Is there a Fast Market? — No → **S21** FARMM Order Process

No ↓ (from S15)

S23 — Is there a Fast Market? — No → **S27** Is Order buy or sell order?

S23 — Is there a Fast Market? — Yes → **S25** Fast Market Process

S27 — Is Order buy or sell order? — Buy → **A**

S27 — Is Order buy or sell order? — Sell → **B**

FIG. 3(a)

DOCKET ALARM
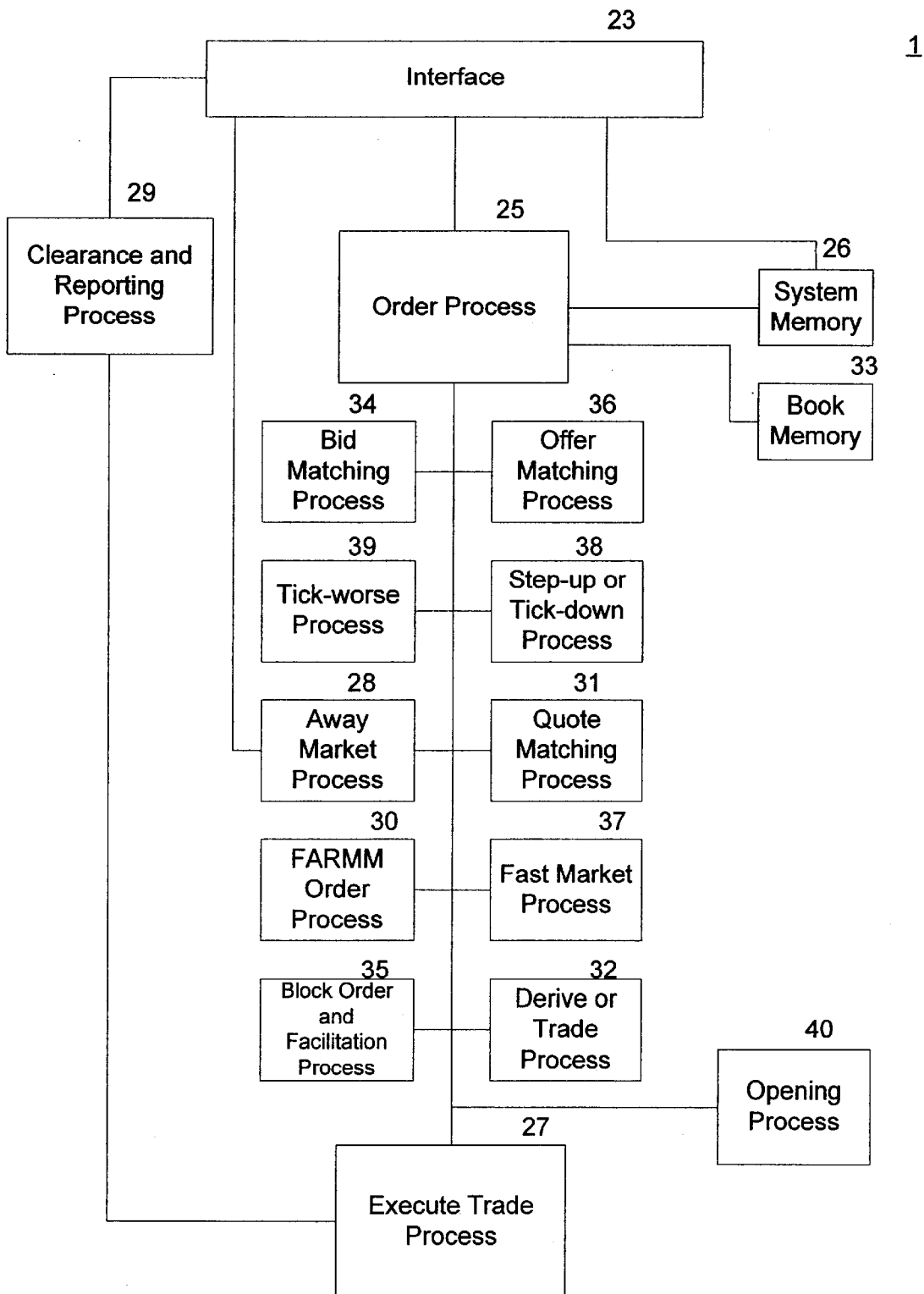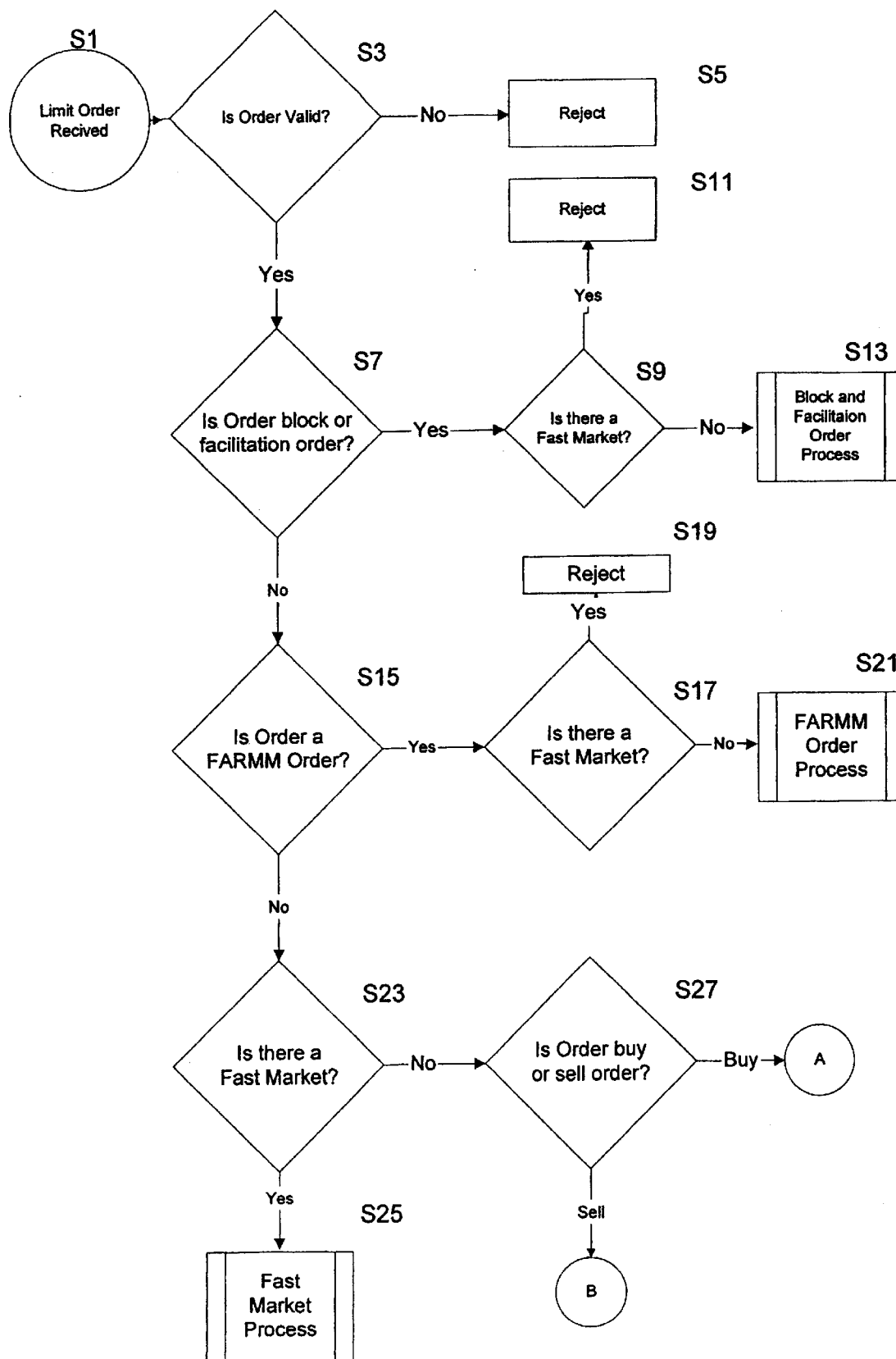
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