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(54) **METHOD AND SYSTEM FOR PERFORMING PROXY BIDDING**

No. 08/624,259, filed on Mar. 29, 1996, now Pat. No. 6,243,691.

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(57) **ABSTRACT**

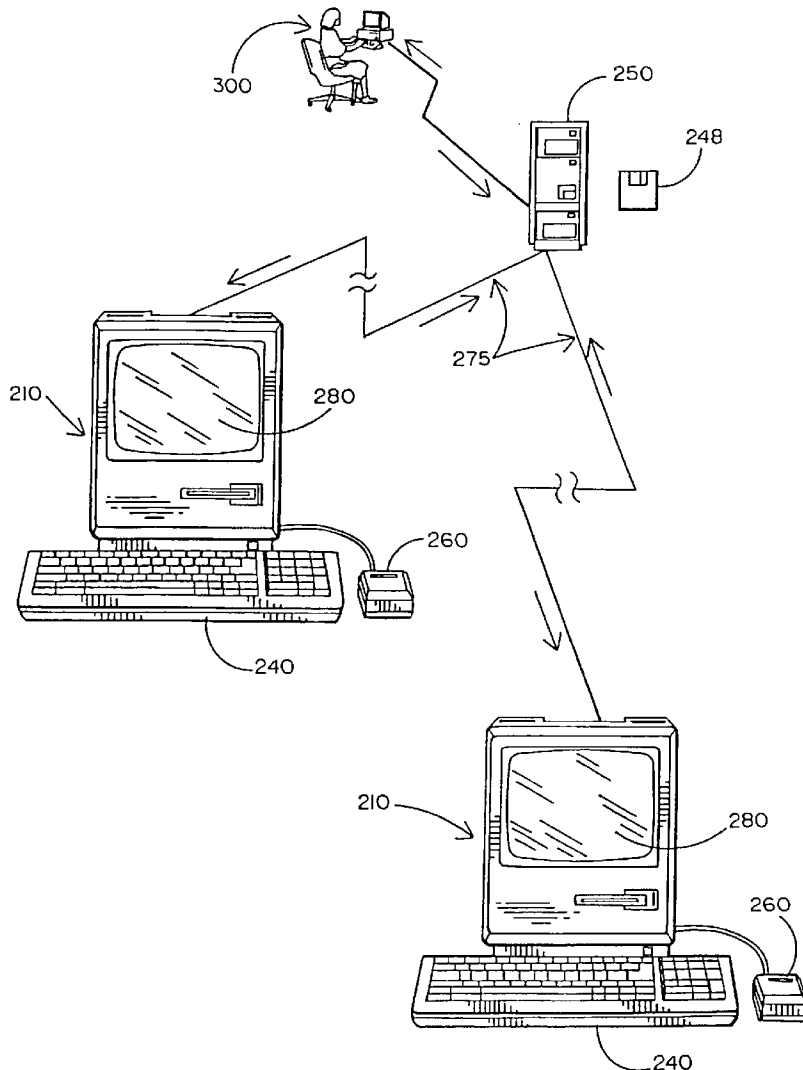
(21) Appl. No.: **10/316,297**

(22) Filed: **Dec. 10, 2002**

**Related U.S. Application Data**

(63) Continuation of application No. 09/706,849, filed on Nov. 7, 2000, which is a continuation of application

A method and system for performing bidding includes receiving a maximum bid amount a bidder is willing to pay for an item from a bidder using an electronic auction system. A proxy bid is continuously and automatically incremented by a preset bid increment to be greater than a current high bid when the current high bid is not associated with the bidder and the current high bid is not greater than the maximum bid amount.



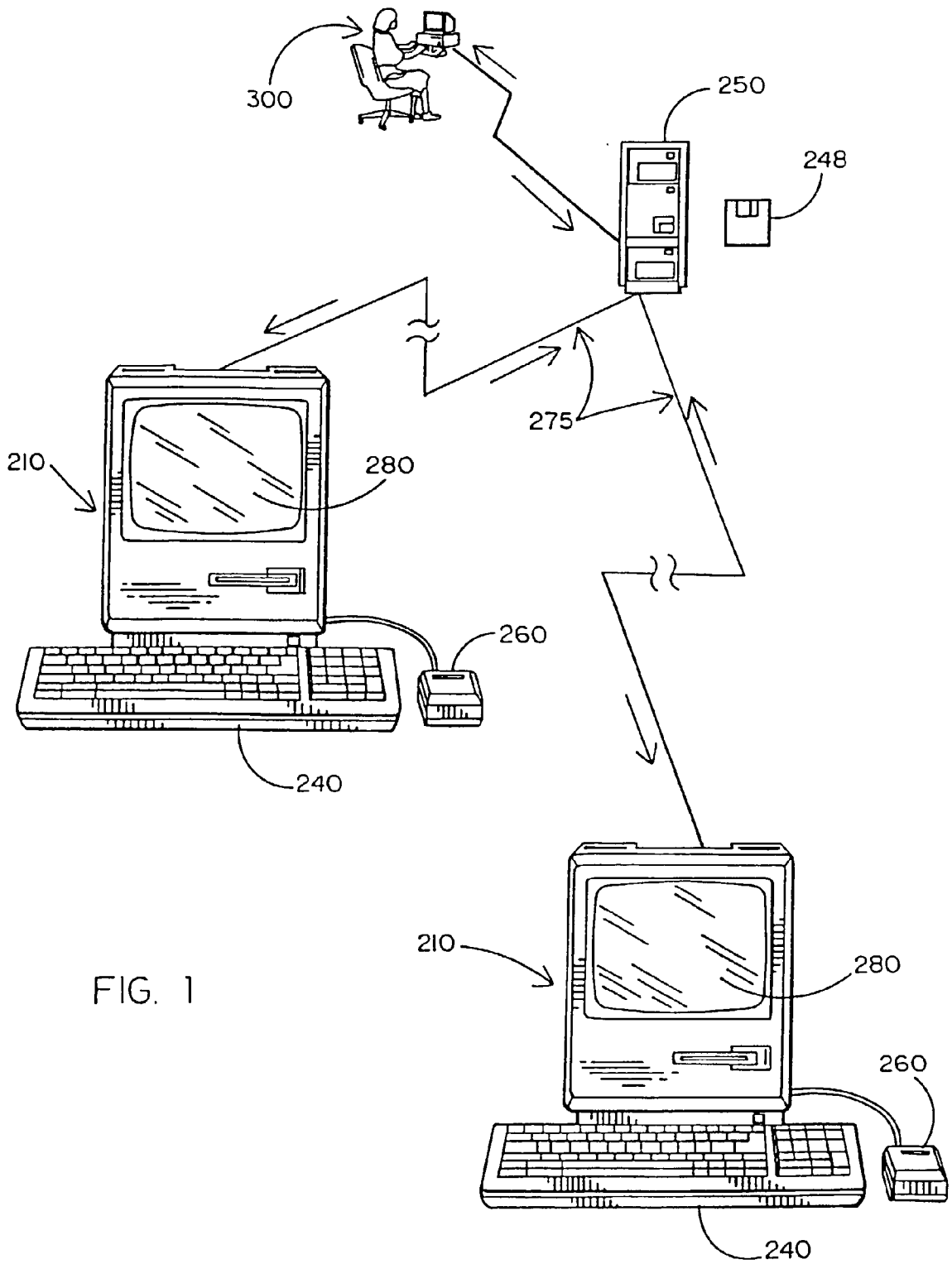
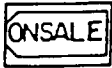
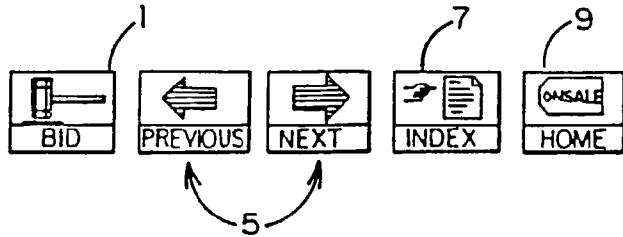
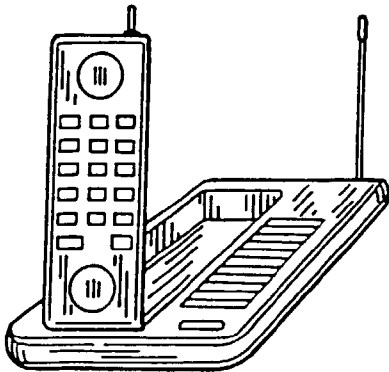


FIG. 1



Cordless 10-Channel Phone Model 5400



List Price: \$129.95  
Minimum Bid: \$1.00  
Bid Increment: \$2.00  
Quantity Available: 16

Auction closes on Fri Mar 29, 1996 1:00 PST.  
Sales Format: Dutch Auction

The current high bidders are:

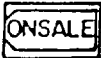
- NY of Reno, NV, Tue Mar 26, 3:27 pm (\$25.00, 1)
- PM of Petersburg, VA, Tue Mar 26, 4:18 pm (\$19.00, 1)
- NA of Corinth, TX, Tue Mar 26, 3:43 (\$17.00, 1): "FOR THE WIFE"
- MN of Grand Prairie, TX, Tue Mar 26, 4:24 pm (\$17.00, 1)
- RD of Cambridge, MA, Tue Mar 26, 2:43 (\$15.00, 1)
- BC of St Laurent, PQ, Tue Mar 26, 2:52 pm (\$15.00, 1)
- JF of Scranton, PA, Tue Mar 26, 2:59 pm (\$15.00, 1)
- CC of Evansville, IN, Tue Mar 26, 3:01 pm (\$15.00, 1)
- DP of Columbia, SC, Tue Mar 26, 3:12 pm (\$15.00, 2)
- LR of Gainesville, FL, Tue Mar 26, 3:40 pm (\$15.00, 1)
- RR of Washington, NC, Tue Mar 26, 3:15 pm (\$13.00, 1)
- FW of University Park, PA, Tue Mar 26, 4:29 (\$9.00, 1)
- DB of Evansville, IN, Tue Mar 26, 2:45 pm (\$5.00, 1)
- SK of Goshen, KY, Tue Mar 26, 2:59 pm (\$5.00, 2 out of 16)

Item #1918.

This Factory Reconditioned Cordless Phone Model 5400 Features:

- Clarity Plus, circuitry for virtually static-free reception
- 10-Channel selection
- 9-Number memory
- Lighted Dial
- Handset holds charge for up to 7 days
- Available in Two-tone Gray

FIG. 2



Cordless 10-Channel Phone Model 5400

NOTICE: It is a violation of law to make bids in a false name or with an invalid credit card, even if the software initially accepts such a bid. Please be aware that even if you do not give us your real name, your web browser transmits a unique internet address to us, which can be used by law enforcement officials to identify you.

Minimum Bid: \$1.00  
Bid increment: \$2.00

Bid (price not to exceed):  
Quantity:

The quantity you request may not always be available. Click here if you are not willing to accept a reduced quantity.

Applicable sales tax, if any, will be added to your order.

If you enter your ONSALE account number, you only need to enter your first name (for security) in the Shipping Address area below.

Account Number: (Optional)  
Shipping Address:  
First Name:  
Last Name:  
Street1:  
Street2:  
City:  
State/Province:  
Zip Code:  
Country:  
Email Address:  
Daytime Phone:  
Nighttime Phone:  
FAX:

Your credit card number is required to guarantee your bid. Your card will not be charged unless your bid is successful. Only Visa and MasterCard cards are accepted.

Credit Card #:  
Expiration Date: Month (e.g. "07") Year  
(Optional) Credit card billing address if different from shipping address:

Name as on Card:  
Street1:  
Street2:  
City:  
State/Province:  
Zip Code:  
Country:

(Optional) You can enter a comment for display on screen with your bid.

Comment:

Click here if you do not want ONSALE to keep you informed of current high bids via electronic mail.  2

PLACE BID

CLEAR FORM



FIG. 3

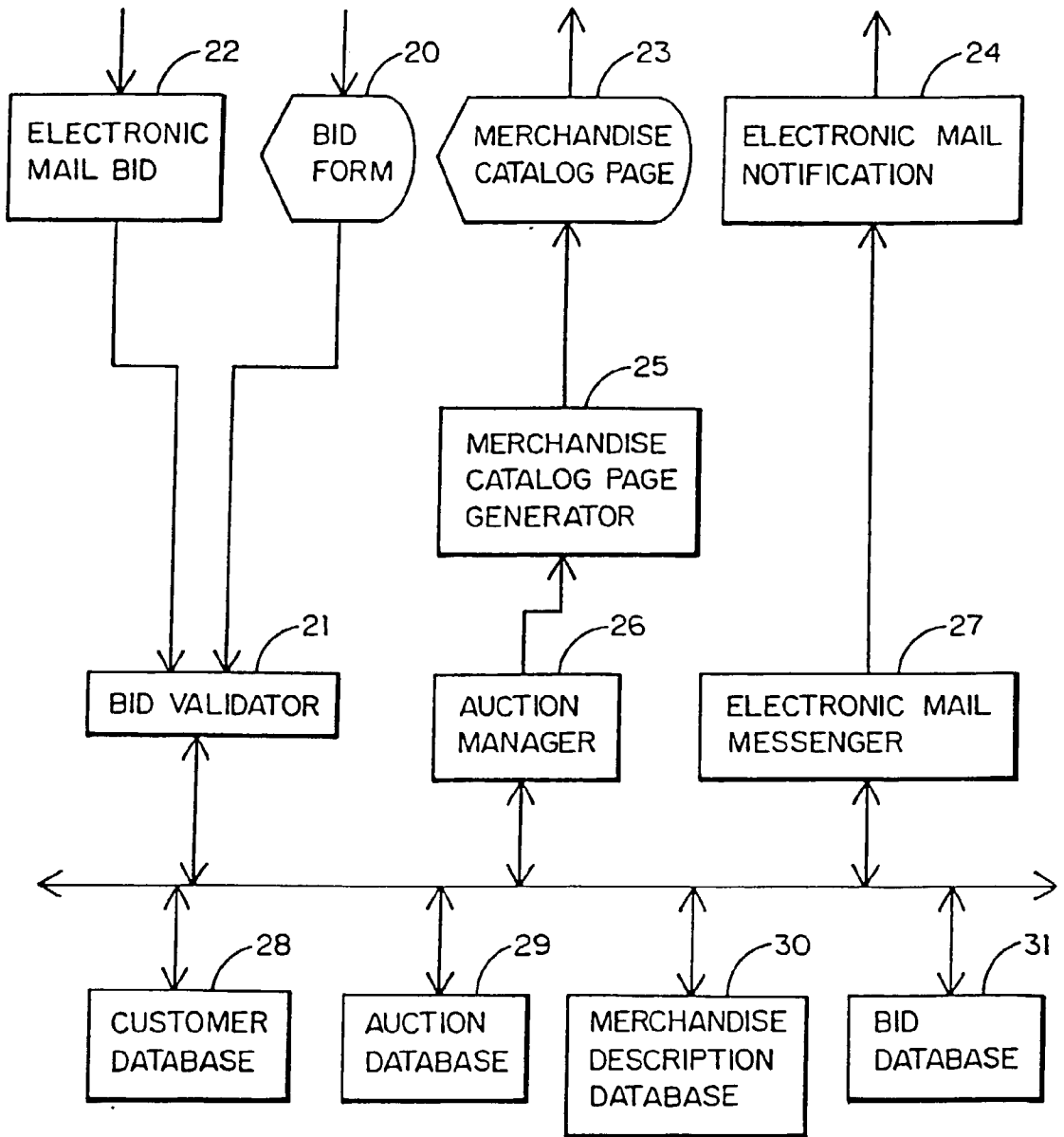


FIG. 4

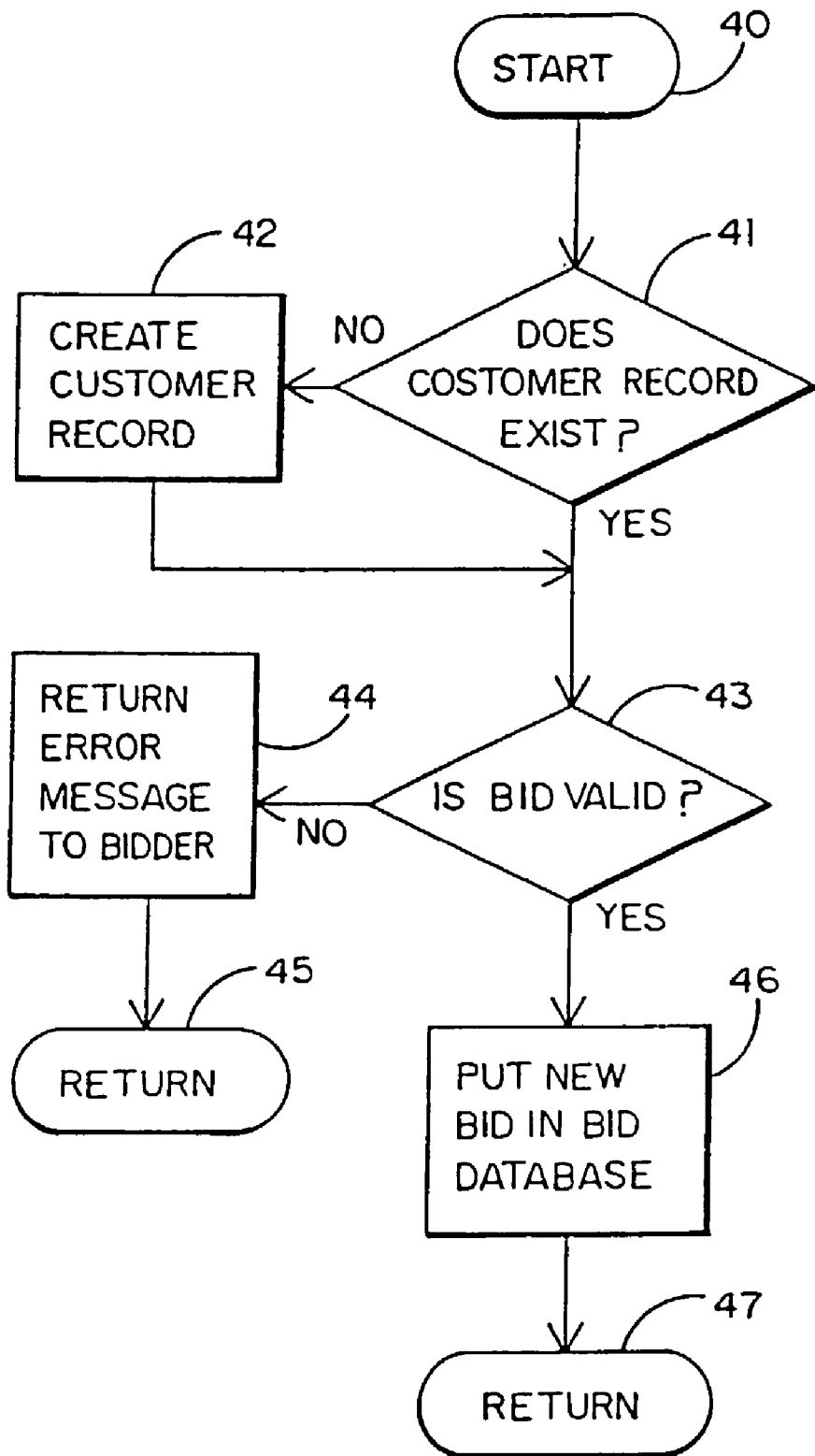


FIG. 5

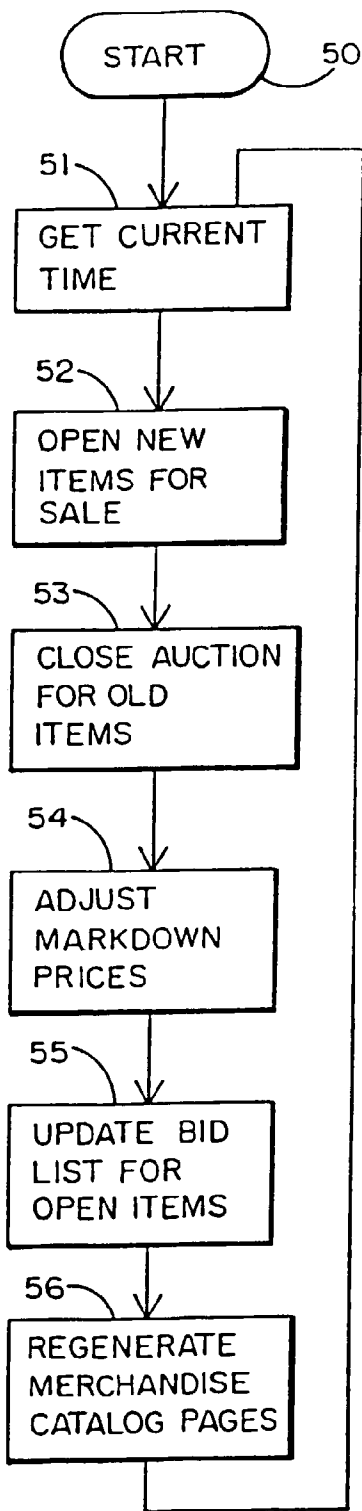


FIG. 6

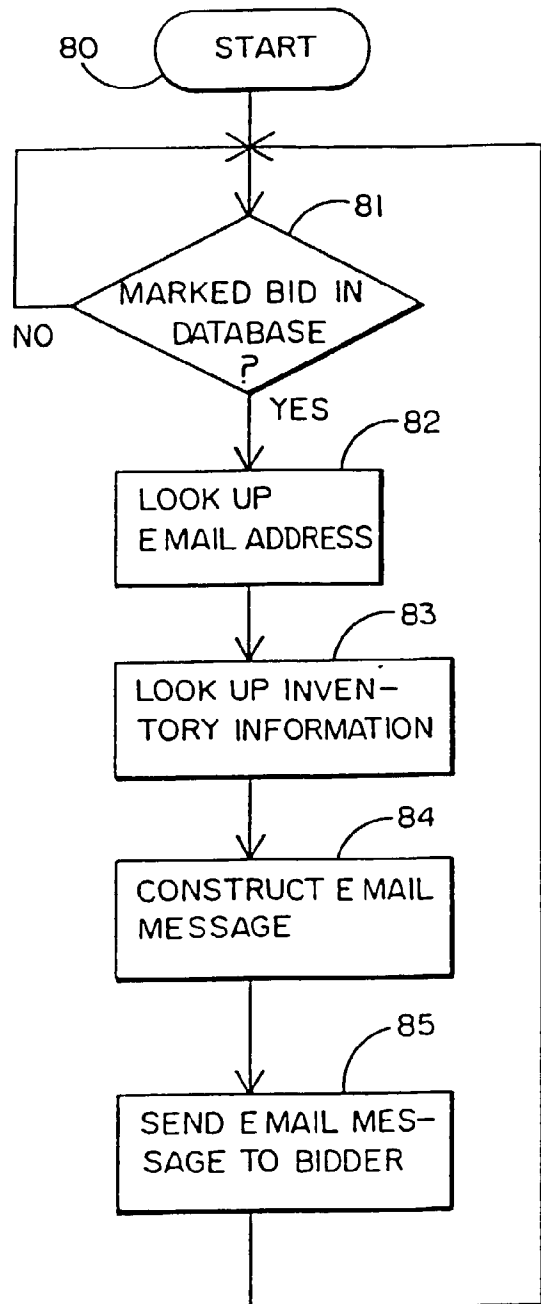


FIG. 8

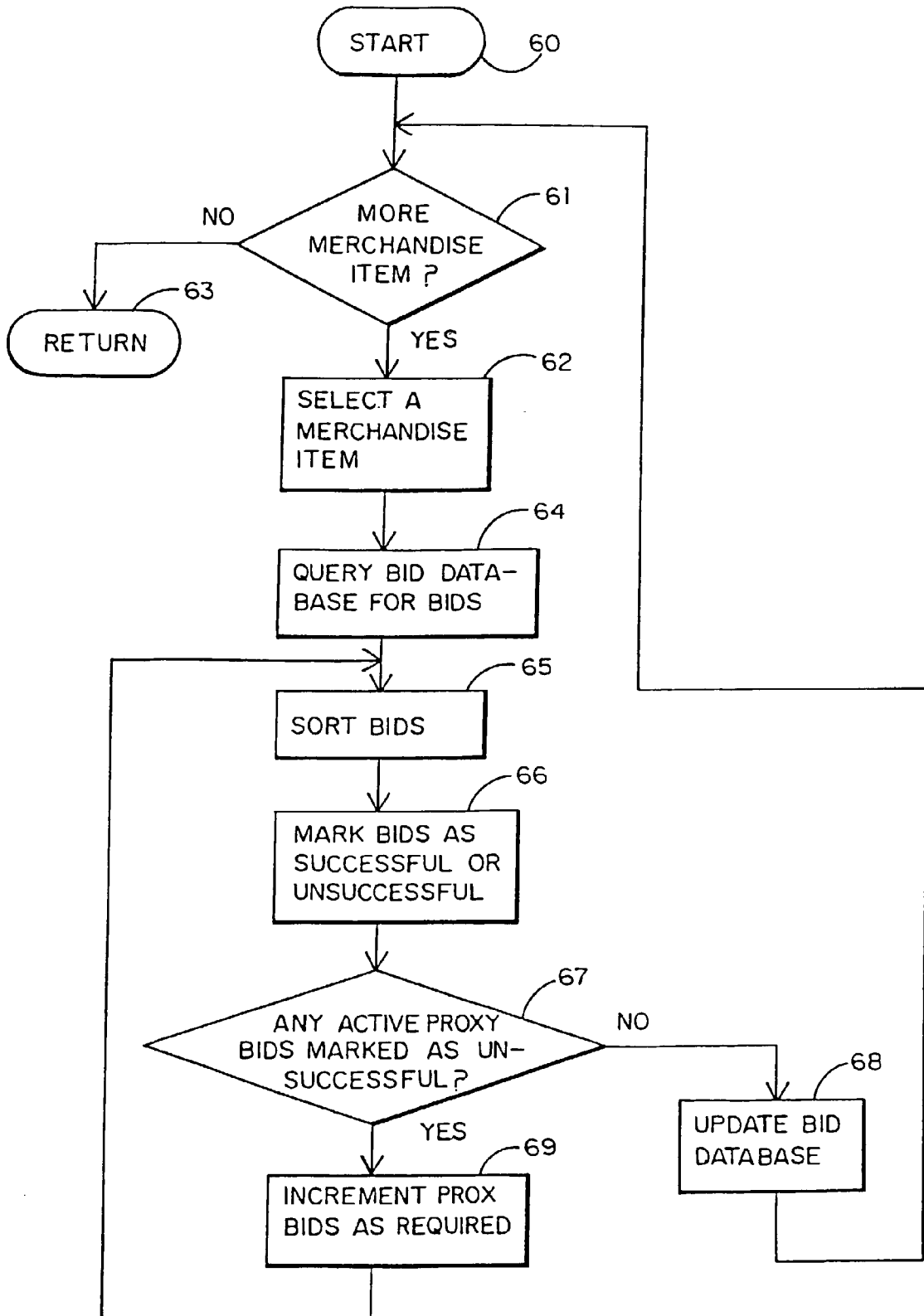


FIG. 7



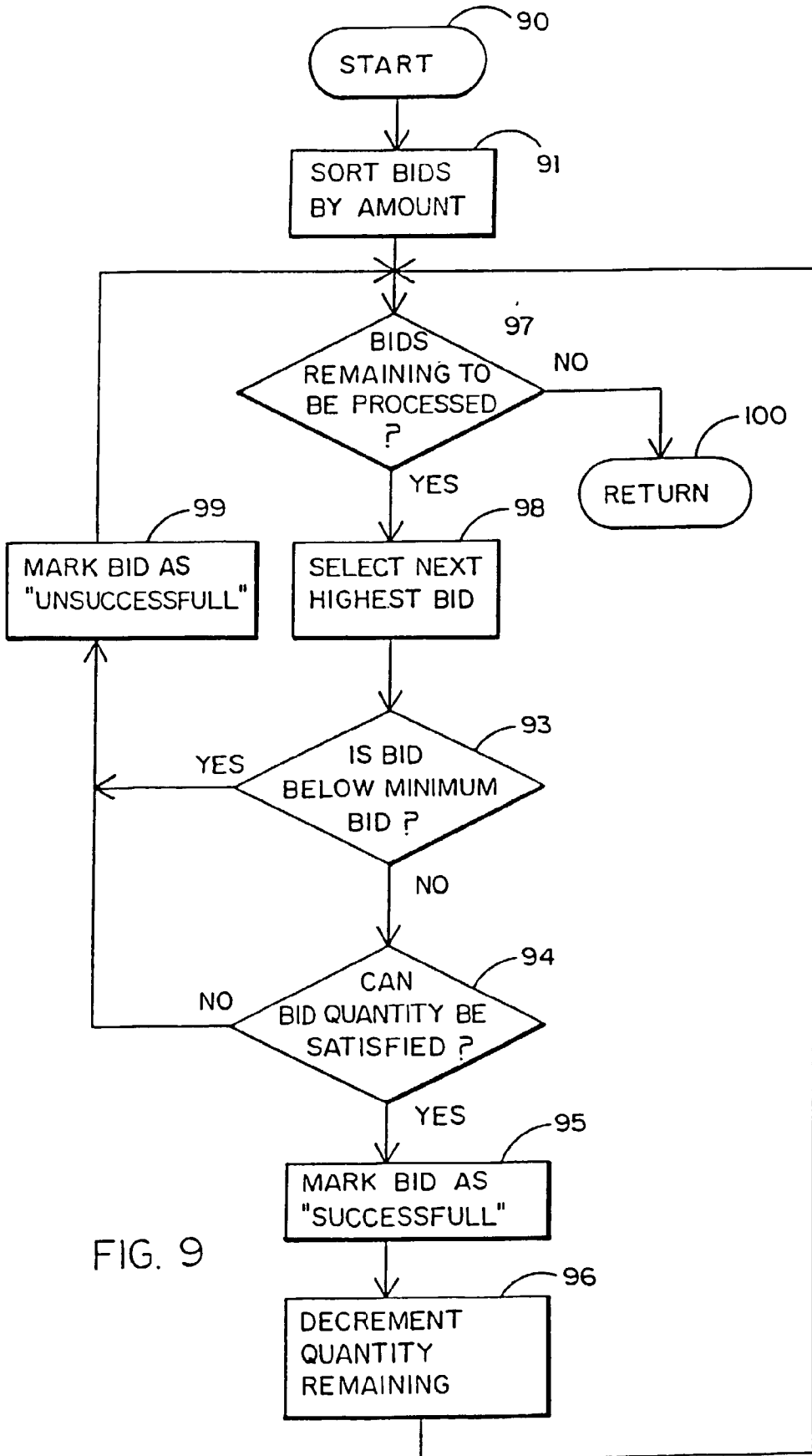


FIG. 9

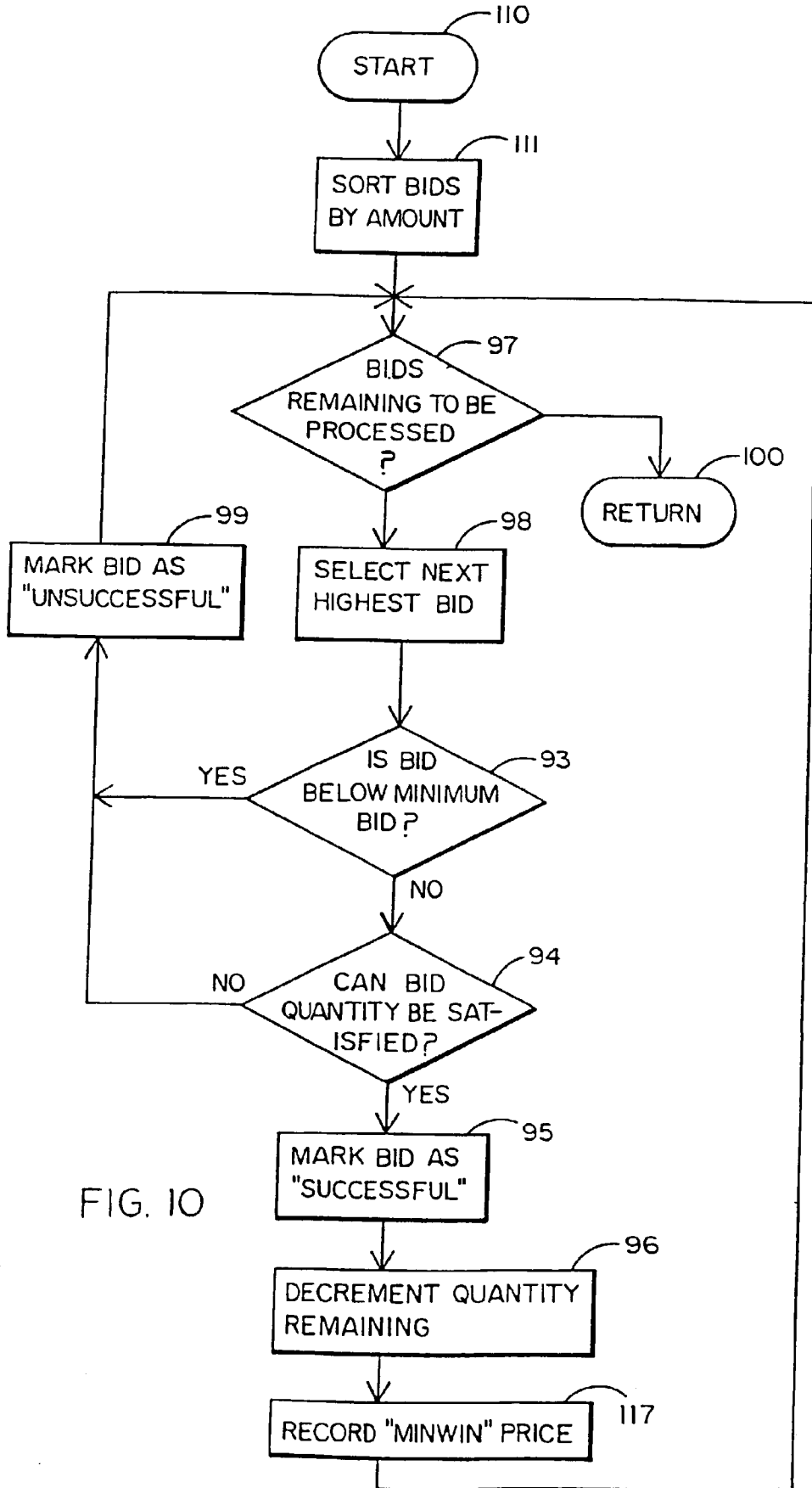


FIG. 10

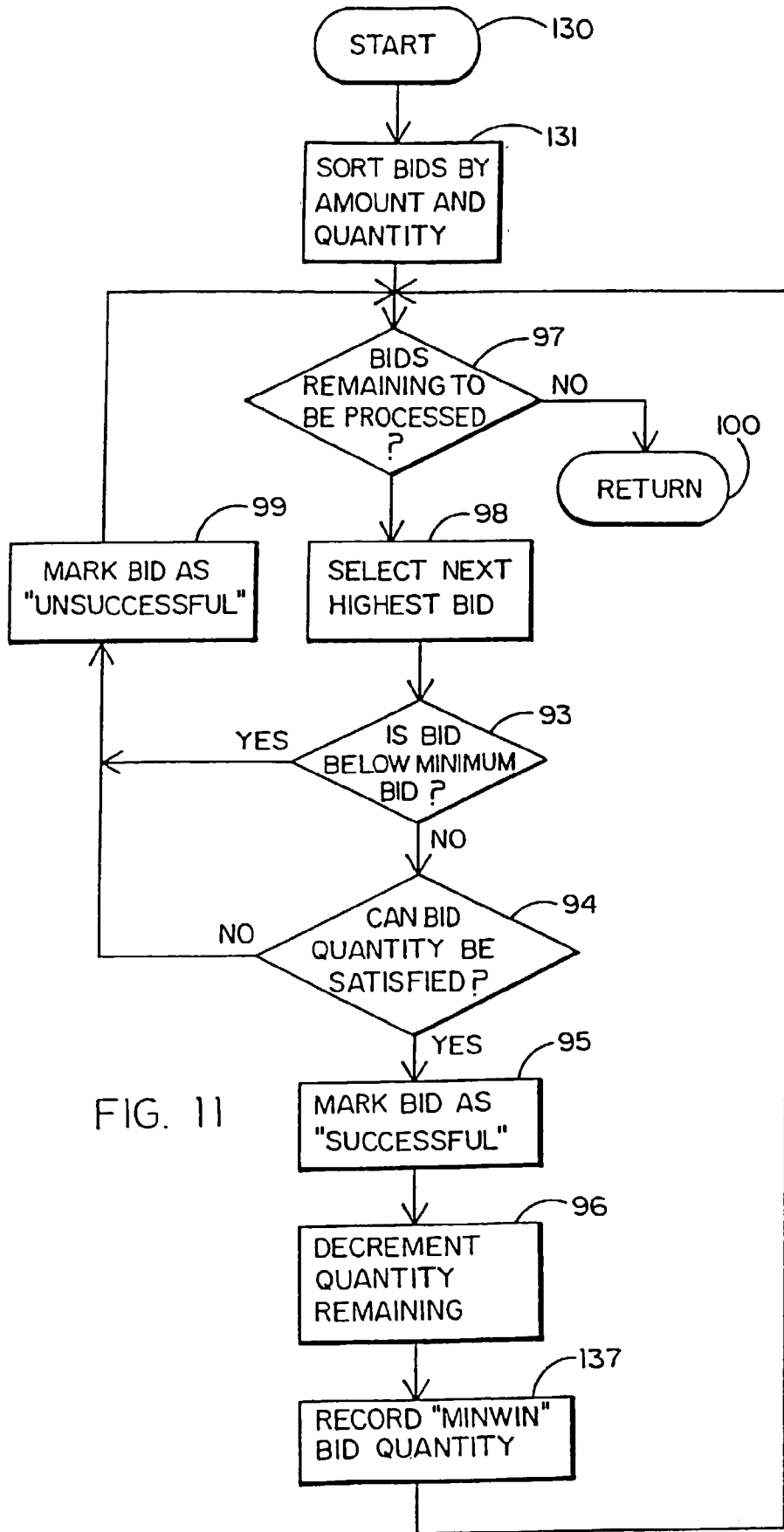


FIG. 11

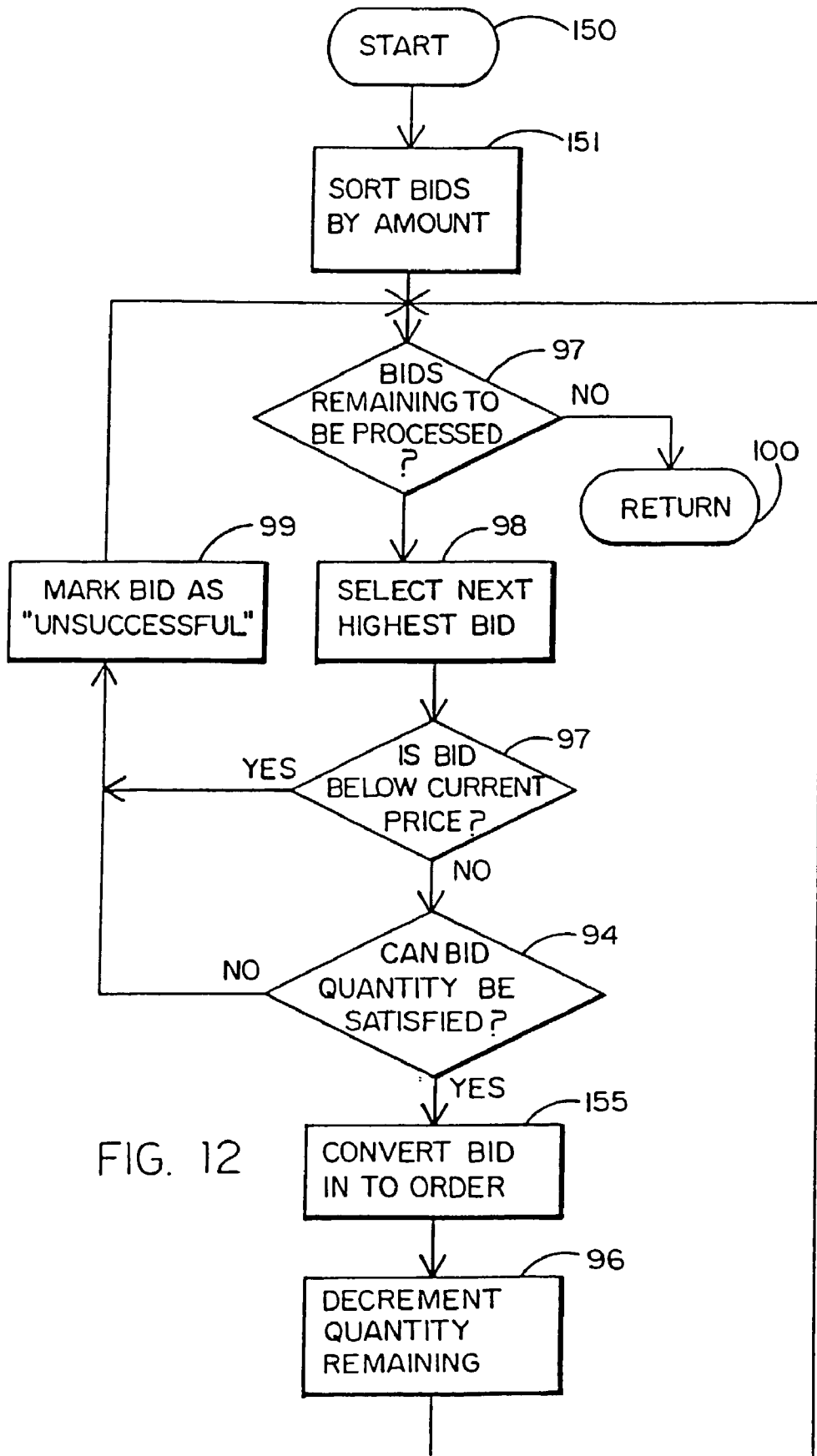


FIG. 12

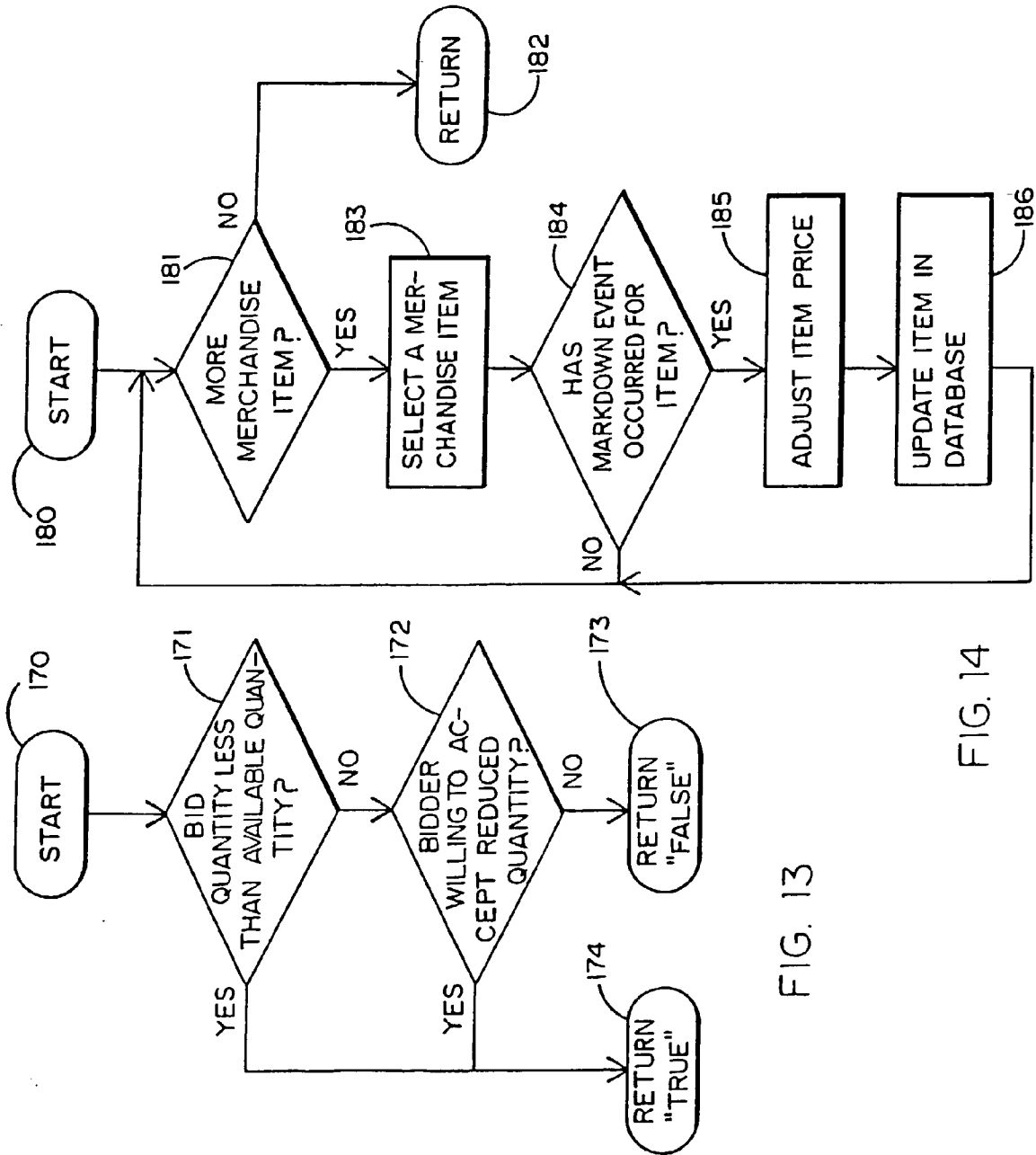


FIG. 13

FIG. 14

## METHOD AND SYSTEM FOR PERFORMING PROXY BIDDING

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of pending U.S. application Ser. No. 09/706,849, filed Nov. 7, 2000, which is a continuation of U.S. application Ser. No. 08/624,259, now issued U.S. Pat. No. 6,243,691, filed Mar. 29, 1996.

[0002] This application is related to copending application Ser. No. \_\_\_\_\_, entitled "Method and System for Validating a Bid", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Offering an Item for Sale Using a User-Selectable Bid Indicia", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Updating Information On a Merchandise Catalog Page", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Automatically Adjusting a Posted Selling Price", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Performing a Bid Quantity Adjustment", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Performing a Buy or Bid Auction", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Providing Status Updates", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Adjusting a Close Time of an Auction", filed \_\_\_\_\_; patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Performing a Progressive Auction", filed \_\_\_\_\_, patent application Ser. No. \_\_\_\_\_, entitled "Method and System for Providing Simultaneous On-Line Auctions", filed \_\_\_\_\_, each commonly assigned with the present invention.

### BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

[0004] The present invention relates generally to electronic commerce and more particularly to conducting an interactive auction over an electronic network.

[0005] 2. Background of the Invention

[0006] Auctions usually take the form of a physical gathering of bidders assembled together within an auction house. Auctions presenting more valuable, collectible merchandise, such as art, coins and antiques, are often preceded by preparation of a catalog of merchandise, circulated to interested parties in advance of the gathering at the auction house, where bidding by those physically present will take place. For auctions of more mundane items, such as household possessions, estate sales and the like, the interested bidders simply appear at the appointed time and place and bid on merchandise in which they are interested.

### SUMMARY OF THE INVENTION

[0007] A method and system for performing proxy bidding includes receiving a maximum bid amount a bidder is willing to pay for an item from a bidder using an electronic auction system. A proxy bid is continuously and automatically incremented by a preset increment to be greater than a current high bid when the current high bid is not associated with the bidder and the current high bid is not greater than the maximum bid amount.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0008] An exemplary embodiment of the present invention is illustrated in the accompanying drawings in which like references include similar elements and in which:

[0009] **FIG. 1** illustrates an exemplary computer environment for implementing the system and method of the present invention;

[0010] **FIG. 2** illustrates an exemplary merchandise catalog page offering an item for sale via electronic auction on the Internet's World Wide Web;

[0011] **FIG. 3** depicts an exemplary bid form for bidding on an auction item;

[0012] **FIG. 4** is a block diagram of components illustrating an exemplary embodiment of the present invention;

[0013] **FIG. 5** is a flowchart illustrating an exemplary bid validator and its method of operation;

[0014] **FIG. 6** is a flowchart illustrating an exemplary auction manager and its method of operation;

[0015] **FIG. 7** is a flowchart illustrating an exemplary bid manager and its method of operation;

[0016] **FIG. 8** is a flowchart illustrating an exemplary electronic mail messenger and its method of operation;

[0017] **FIG. 9** is a flowchart illustrating an exemplary standard auction format and its method of operation;

[0018] **FIG. 10** is a flowchart illustrating an exemplary Dutch auction format and its method of operation;

[0019] **FIG. 11** is a flowchart illustrating an exemplary progressive auction format and its method of operation;

[0020] **FIG. 12** is a flowchart illustrating an exemplary buy or bid sale format and its method of operation;

[0021] **FIG. 13** is a flowchart illustrating an exemplary bid quantity determination and its method of operation; and

[0022] **FIG. 14** is a flowchart illustrating an exemplary markdown price adjustment and its method of operation.

### DETAILED DESCRIPTION

[0023] A method and system for performing proxy bidding are disclosed. In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be evident, however, to one skilled in the art that the present invention may be practiced without these specific details.

[0024] An exemplary system includes a database for maintaining descriptions of the merchandise for auction, the bids, and other relevant information in a commercially available database system. Database searches may be performed periodically to check for new items to be made visible to potential bidders. Such periodic searching allows an individual charged with maintaining this system to load relevant information into the database at his or her leisure. Once the database is loaded with information about the item and the item is scheduled for presentation to potential bidders, the system takes the merchandise information and creates a human readable catalog page for a viewing over a public network such as the Internet's World Wide Web. Bidders are

then able to view the new item for auction and to place their bids. These catalog pages preferably contain the current high bid, bid increment, quantity available, merchandise description, and picture of the item.

[0025] Upon accessing a public network and seeing an item's catalog page, the bidder may press a button on the catalog page or take some similar action which causes a bid form to be displayed on the screen. The bidder then enters the information necessary to place a bid, such as their name and address, bid amount, payment information, etc., and then presses a bid submission button, or takes a similar action which sends the bid to the system.

[0026] The system receives the electronic bid information and places it in the bid database. Because this new bid will, in general, be a bid for a higher amount than was last bid by another party, the system will regenerate the item's catalog page. This updated catalog page will then show the new high bid to any prospective bidders who later access that catalog page.

[0027] Because most bidders will not, in general, be accessing the network and viewing the merchandise catalog pages as they are updated with new high bids, the system may send electronic mail notifications to bidders who have been outbid by the just-placed bid. These electronic mail notification messages may contain the relevant merchandise information, the current high bid, the bid increment, etc., and encourage the bidder to submit a new and higher bid to outbid the current high bidder. These electronic mail notification messages allow the bidder to enter a new bid by replying to the electronic mail message and sending it back to the system.

[0028] Upon receiving a new or revised bid via electronic mail, the system follows the same set of actions as when the bidder places a bid using the electronic bid form when viewing a merchandise catalog page, namely, the system extracts the relevant bid information from the electronic mail message, deposits this information in the bid database, and then updates the merchandise catalog page as appropriate. Such an electronic mail message bid may further cause a new round of electronic mail notifications to go out to the recently outbid bidders.

[0029] This process may continue until the system detects that the item is scheduled to be closed for further bidding or another closing trigger is detected. At this point, the system closes the auction by updating the merchandise catalog page with the final winning bid information and by sending electronic mail notifications to both the winning bidder or bidders and the losing bidder or bidders.

[0030] The exemplary embodiment of the present invention provides an electronic auction method and system for presenting merchandise for sale at auction to customers over an electronic network, such as the Internet's World Wide Web. Potential customers are presented with a series of descriptive merchandise catalog pages through which they may navigate to find items (lots) of interest. Upon finding a lot of interest, customers may click a button on screen to display a form for placing a bid on the lot. After submitting this bid, the electronic auction system records the bid and updates the lot's merchandise catalog page to show the current high bid or bids and to whom such bids are attributable. When the auction is closed, after a period of no

bidding activity, at a predetermined time, or when a desired sales volume is reached, the electronic auction system notifies the winning and losing bidders by electronic mail and posts a list of the winning bidders on the closed lot's merchandise catalog page.

[0031] The exemplary embodiment of the present invention may be implemented as a computer program 248 running on a central server host computer 250, shown in FIG. 1, attached to a wide area network 275 accessible by many potential customers through remote terminals 210. An exemplary network for implementing the present invention is the Internet which is accessible by a significant percentage of the world population, although the network may also be a local area or limited area accessible network. Potential customers are presented at screen 280 with merchandise catalog pages, such as the one shown in FIG. 2, generated by merchandise catalog page generator 25 shown in FIG. 4. Each merchandise catalog page includes several action buttons 5 that allow the customer to move from catalog page to catalog page and to place bids using keyboard 240 and pointing device 260. The user may call up an index of available merchandise by pressing button 7 or may return to a central home page by pressing button 9.

[0032] By pressing bid button 1 in FIG. 2, the customer is presented with a bid form such as the one shown in FIG. 3. The customer fills out the required information in the bid form and presses "Place Bid" button 2 to send the bid to the electronic auction system for processing. Other equivalent means for submitting a bid could be used, as understood by those skilled in the art to which the present invention pertains.

[0033] FIG. 4 illustrates a high level block diagram of the electronic auction system according to one embodiment of the present invention. As shown, information from bid form 20 is received by the electronic auction system where it is processed by bid validator 21. Bid validator 21 examines the bid information entered by the customer on bid form 20 to ensure that the bid is properly formatted, all necessary data is present, and the data values entered look credible. Exemplary functions of bid validator 21 include verifying credit card information entered by the customer, checking that a complete name and shipping address has been entered, that the proper state abbreviation and zip code have been entered, that an appropriate bid amount has been entered, and that a telephone or facsimile number has been entered. Once the bid information has been validated, the bid validator 21 places the bid in bid database 31.

[0034] Auction manager 26 may frequently query the bid database 31 to see if any new bids have been placed. If new bids are found during the query, then auction manager 26 calculates the current high bidder or bidders and instructs merchandise catalog page generator 25 to regenerate a catalog page with the updated bid information.

[0035] Auction manager 26 is also responsible for opening and closing auctions. This entails making merchandise lots available for bidding by customers and disabling their associated buy or bid features on the merchandise pages that have been posted to potential bidders but have closed. When auction manager 26 determines that a new lot should be opened for bidding or an available lot should be closed, it instructs merchandise catalog page generator 25 to create or update the merchandise catalog pages for the appropriate lots.

[0036] Electronic mail messenger 27 frequently queries bid database 31 for bids recently marked by auction manager 26 as having been outbid or as having won an item in a recently closed auction. If such bids are found, the electronic mail messenger 27 formats an appropriate electronic mail notification message 24 and sends this message to the customer. Many customers read their electronic mail throughout the day, making this a convenient mechanism for keeping them informed about the status of merchandise on which they are actively bidding. Bidders may reply to an electronic mail notification message 24 informing them that they have been outbid by including an increased bid amount in the reply message. An electronic mail bid 22 sent in reply to the notification is received by the electronic auction system and processed by bid validator 21 as described above.

[0037] FIG. 5 illustrates in detail an exemplary procedure of bid validation as accomplished by bid validator 21 shown in FIG. 4. A bid is received by bid validator 21 and the customer is looked up at step 41 in customer database 28. If no customer record exists for the customer then a new customer record is created 42 and placed in customer database 28. From there, the bid information is validated 43 as previously described. If the bid data includes one or more errors, then an error message is returned 44 to the bidder, for example in the form of a well-formatted page posted across the network, itemizing the errors found in the bid. If the bid is valid, as found in step 43, then the bid is placed 46 in bid database 31.

[0038] FIG. 6 provides a detailed illustration of exemplary procedures carried out by auction manager 26. Auction manager 26 may be a continuously running system that begins by getting the current time as at step 51. It then checks to see if any new items for sale are to be opened by examining the merchandise database to see if any new merchandise items are scheduled to be made available for bidding by customers at or before the current time. Operator 300, or some automated substitute, may upload merchandise and scheduling information to the database, as shown in FIG. 1. If new merchandise items are scheduled for posting, these items are opened for bidding 52. The auction manager then examines the merchandise database to see if any merchandise items are scheduled to be closed from customer bidding. If so, these items are closed from bidding 53. Auction manager 26 then examines the merchandise database to see if any merchandise items posted with a price markdown feature are scheduled to have their prices adjusted. If so, the prices of these items are adjusted 54 in accordance with the particular item's price adjustment parameters. Such parameters may include bidding activity over time, amount of bids received, and number of items bid for. Auction manager 26 then updates 55 the bid list for open items by recalculating the current high bidder list and regenerating the merchandise catalog pages 56 to reflect these new bids. This step is more fully described below with reference to FIG. 7.

[0039] FIG. 7 illustrates exemplary procedures carried out by the bid manager in updating the bid list for open items 55 as shown in FIG. 6. The bid manager begins by checking 61 if there are more merchandise items to be processed. If such items are found, the bid manager selects 62 a merchandise item to process and queries 64 the bid database for bids for this item. These bids are sorted 65 using a variety of different

priority ranking schemes depending upon the auction method and system used for the particular merchandise item, as described in more detail below. Then, the bids are marked 66 as either successful or unsuccessful depending upon the bid price of the respective bids and the quantity of the item being bid on relative to the quantity of the item being auctioned. In an exemplary embodiment, a quantity of an item may be put up for auction, and individual bidders may bid on any quantity of the item desired, up to the quantity of the item being auctioned.

[0040] The bid manager then checks 67 to see if there are any active proxy bids marked as unsuccessful. A proxy bid is a special bid type that allows auction manager 26 to automatically bid on the bidder's behalf up to a limited amount established by the bidder when his or her initial bid is placed. The auction manager will increase the bid as necessary up to the limit amount. This feature allows the customer to get the lowest possible price without exceeding a limit preferably established when the bid is entered. If there are active proxy bids marked as unsuccessful, then the bid manager increments 69 the proxy bids by a preset bid increment. This procedure of sorting 65 marking 66 bids and incrementing 69 the proxy bids as required continues until either there are no additional proxy bids marked as unsuccessful or the proxy limits have been reached on the proxy bids. At this point, bid database 31 is updated 68 with the marked bids. This process is then repeated for each merchandise lot open at the current time for bidding by customers.

[0041] FIG. 8 illustrates exemplary procedures carried out by electronic mail messenger 27 which notifies bidders when they have been outbid. When marked bids are updated in bid database 31 as shown in FIG. 7, electronic mail messenger 27 detects 81 the presence of these marked bids and then looks up 82 the customer's electronic mail address and looks up 83 inventory information on the item desired by the bidder. With this information, electronic mail messenger 27 constructs 84 an electronic mail message informing the bidder that he or she has been outbid. Once constructed, the electronic mail notification message 24 is sent to the bidder as shown at step 85.

[0042] Various components of the electronic auction system can communicate between themselves in a variety of ways. In an exemplary embodiment, bid validator 21, auction manager 26, and electronic mail messenger 27 communicate by adding, marking, and updating records in the various databases. Each of these components periodically checks at least one of the databases to see if anything relevant to their respective functions has changed and take action accordingly. However, the components could send direct messages between themselves or call each other by means of program subroutines to signal important events that would require one or the other component to update its state.

[0043] A variety of different auction formats may be implemented using the basic technique described above. The simplest is the "Standard Auction" format, whereby the electronic auction system awards the merchandise to the top bidder or bidders in accordance with their bids once bidding has stopped. Using this format, if there is a plurality of a specific item, the system awards the merchandise to the top



bidders. Bidders may bid on more than one unit, and different successful bidders will, in general, pay different prices for an item.

[0044] FIG. 9 illustrates the exemplary Standard Auction format where bid manager 55, shown in FIG. 6, determines which bids to mark as successful or unsuccessful, as shown in step 66 in FIG. 7. Bid manager 55 begins by sorting 91 the bids by amount of the bid. If there are bids remaining to be processed, determined at step 97, the highest remaining bid is selected 98 to be checked. If the bid is below the minimum bid allowed for the particular merchandise item, as determined at step 93, the bid is marked 99 as unsuccessful. If not, the bid is checked 94 to see if the quantity may be satisfied. A bid may be satisfied if the quantity of the item bid upon is available. This information is available from auction database 29. If not, then the bid is marked 99 as unsuccessful. Optionally, the system could ask the user if a lesser quantity than bid upon will be acceptable, as shown in FIG. 2 at box 310. If the bid quantity can be satisfied, as determined at step 94, then the bid is marked 95 as successful and the item quantity remaining, recorded in auction database 29, is decremented 96 by the bid quantity. After the quantity remaining is decremented 96, and if, as determined at step 97, there are still bids remaining to be marked, the next highest bid is selected 98 and the steps of FIG. 9 are repeated.

[0045] The exemplary electronic auction system of the present invention also provides a "Dutch Auction" format, wherein the electronic auction system awards the merchandise to all of the top bidders for whom there is available inventory at the price bid by the lowest successful bidder. This format may be preferred by customers for being the most fair when a plurality of a specific item is being auctioned. As with all bidding, there will be a range of bids submitted. In the Dutch Auction format, the highest bidders are awarded the merchandise but at the same price for all successful bidders, the price bid by the lowest successful bidder.

[0046] FIG. 10 illustrates the exemplary Dutch Auction format whereby bid manager 55 shown in FIG. 6 determines which bids to mark 66 as successful or unsuccessful, as shown in FIG. 7. Bid manager 55 begins by sorting 111 the bids by amount of the bid. If there are bids remaining to be processed, as determined at step 97 the highest bid is selected 98 to be checked. If the bid is below the minimum bid allowed for the particular merchandise item, as determined at step 93, the bid is marked as unsuccessful 99. If not, the bid is checked 94 to see if the bid quantity may be satisfied. If the bid cannot be satisfied, then the bid is marked as unsuccessful at step 99. If the bid quantity can be satisfied, then the bid is marked as successful at step 95 and the item quantity remaining is decremented 96 by the bid quantity. At this time the MinWin price is recorded 117. The MinWin price is the price above which a new bidder must bid in order to be successful in the Dutch Auction format were the auction to close at that moment. The MinWin price is, in general, the bid price of the lowest bid that is marked as successful. After recording the MinWin price at step 117, where there are still bids remaining to be marked, as determined at step 97, the next highest bid is selected 98 and the steps of FIG. 10 are repeated.

[0047] The exemplary electronic auction system may also include a "Progressive Auction" format, wherein the elec-

tronic auction system awards the merchandise to the top bidders based on price bid. As with the Dutch Auction format, the highest price bids are awarded the merchandise up to the quantity available of the item being auctioned. However, unlike the Dutch Auction format, the system awards the merchandise to the successful bidders at different prices depending on the quantity bid. In the exemplary embodiment, a successful bidder for a single unit of an item is awarded the item at the price of the lowest successful bid for a single unit of the item. A successful bidder for a higher quantity of the same item is awarded the item at the price of the lowest successful bid at that quantity or any lower quantity. For example, a successful bidder for a quantity of five would pay the lowest price for any successful bid for quantity one through five of the item. The price paid for a given quantity is termed the "MinWin" price for that quantity. The Progressive Auction format ensures that successful bidders for a quantity of an item pay the lowest price paid by any other successful bidder at that quantity level or below. Use of this format leads to lower prices for those who successfully bid on larger quantities of an item, provides an impetus for volume buying, and therefore leads to greater sales volume.

[0048] FIG. 11 illustrates the exemplary Progressive Auction format, wherein bid manager 55 shown in FIG. 6 determines which bids to mark as successful or unsuccessful 66 as shown in FIG. 7. Bid manager 55 begins by sorting 131 the bids by amount of the bid. If there are bids remaining to be processed, as determined at step 97, the highest bid is selected 98 to be checked. If the bid is determined to be below the minimum bid allowed for the particular merchandise item at step 93, the bid is marked as unsuccessful 99. If not, the bid is checked at step 94 to see if the bid quantity can be satisfied. If not, then the bid is marked 99 as unsuccessful. If the bid quantity is checked and found to be satisfied at step 94, then the bid is marked as successful 95 and the item quantity remaining is decremented 96 by the bid quantity. The MinWin price is then recorded 137. The MinWin price is the price above which a new bidder must bid in order to be successful in the Progressive Auction format were the auction to close at that moment. The MinWin price is, in general, the bid price of the lowest bid at the current bid quantity or lower that is marked as successful. After recording the MinWin price 137, if there are still bids remaining to be marked, the next highest bid is selected 98 and the steps of FIG. 11 are repeated.

[0049] The exemplary electronic auction system may also include a "Buy Or Bid" format wherein the electronic auction system awards merchandise to bidders who place bids at or above a posted selling price. The item remains for sale until the available quantity is purchased. Bids that are below the posted selling price are maintained in reserve by the system. If a certain sales volume is not achieved in a specified period of time, the electronic auction system automatically reduces the price by a predetermined amount or a predetermined percentage of the price and updates the merchandise catalog page accordingly. The lower price may be at or below some of the bids already in the bid database. If such bids are present, they are then converted to orders and the quantity available is reduced accordingly. Similarly, if a certain sales volume is exceeded in a specified period of time, the electronic auction system automatically increases the price by a set amount or by a set percentage of the price and updates the merchandise page accordingly. These auto-

matic price changes allow the seller to respond quickly to market conditions while keeping the price of the merchandise as high as possible to the sellers benefit.

[0050] FIG. 12 illustrates the exemplary Buy Or Bid format whereby bid manager 55, as shown in FIG. 6, determines which bids to mark as successful or unsuccessful 66, as shown in FIG. 7. Bid manager 55 begins by sorting 151 the bids by amount. If there are bids remaining to be processed, as determined at step 97, the highest bid is selected 98 to be checked. If the bid is below the current price of the merchandise item, as determined at 93, then the bid is marked 99 unsuccessful. If the bid is not below the current price, as determined at 93, then the bid is checked 94 to see if the bid quantity can be satisfied. If not, the bid is marked as unsuccessful 99. If the bid quantity can be satisfied, then the bid is converted into an order 155 at the current price of the item and the item's quantity remaining is decremented 96. The bids remaining to be processed, as determined at 97, are then checked and the steps of FIG. 11 are repeated. From time to time, the current price of the merchandise item may be raised or lowered either by manual input from an operator 300 as shown in FIG. 1 or by automatically using the "markdown" feature described below with reference to FIG. 14.

[0051] FIG. 13 illustrates in more detail the step of determining if the bid quantity can be satisfied 94. If the bid quantity is determined to be less than the available quantity of the merchandise item at step 171, then the test is found satisfied at step 174. If not, then the bid is checked at 172 to see if the bidder is willing to accept a reduced quantity. When placing a bid, the bidder indicates its willingness to accept a partial quantity in the event that an insufficient quantity of the item is available to satisfy the bid if successful. If the bidder is found willing to accept a reduced quantity at 172, then the test is found satisfied at 174. If not, the test fails at 173 and the bid is marked as unsuccessful at, for example, 99 in FIG. 9.

[0052] The exemplary electronic auction system also includes a "markdown" feature, wherein the electronic auction system awards merchandise to buyers who place orders at the currently posted selling price. The item remains on sale until the available quantity is purchased. If a certain sales volume is not achieved in a specified period of time, the electronic auction system automatically reduces the price by a set amount or a set percentage and updates the merchandise catalog page accordingly. This lower price encourages buyers to take advantage of the new price. If a certain sales volume is exceeded in a specified period of time, the electronic auction system automatically increases the price by a set amount or a set percentage and updates the merchandise page accordingly. These automatic price changes allow the system to respond to market conditions while keeping the prices of the merchandise as high as possible to the seller's benefit.

[0053] FIG. 14 illustrates the exemplary Markdown price adjustment feature whereby auction manager 26, as shown in FIG. 4, periodically adjusts 54 the sales prices or minimum bid prices, of the merchandise items according to a predetermined schedule as shown in FIG. 6. If more merchandise items are found in the merchandise database at 181, a merchandise item is selected 183 for Markdown. If a Markdown event has occurred for the item, as determined at

184, the item's price is adjusted 185 according to the schedule preset for the individual item. Alternatively, the adjustment could be relative to prices offered for the merchandise. The merchandise item is then updated 186 in the database with the new sale price or minimum bid price. The steps of FIG. 14 are then repeated for each successive merchandise item in the merchandise database.

[0054] The exemplary electronic auction system may include a "Proxy Bidding" feature that may be applied to any of the auction formats described above. FIG. 7 fully describes auction manager 26 including the Proxy Bidding feature. When Proxy Bidding is employed, a bidder places a bid for the maximum amount they are willing to pay. The electronic auction system, however, only displays the amount necessary to win the item up to the amount of the currently high proxy bids of other bidders. Typically, the currently high bids display an amount that is one bidding increment above the second highest bid or bids, although a percentage above the second highest bids may be used as well. When a new bidder places a bid that is above a currently displayed high bid, the proxy feature will, in general, cause the currently high bid to move up to an amount higher than the new bid, up to the maximum amount of the currently high bidder's proxy bid. Once a new bidder places a bid in excess of the currently high bidder's proxy bid, the new bid becomes the current high bid and the previous high bid becomes the second highest bid. This feature allows bidders to participate in the electronic auction without revealing to the other bidders the extent to which they are willing to increase their bids, while maintaining control of their maximum bid without closely monitoring the bidding. Participation is engaged in automatically on the bidder's behalf by the inventive system. The feature guarantees proxy bidders the lowest possible price up to a specified maximum without requiring frequent inquiries as to the state of the bidding.

[0055] A variety of different auction formats may be implemented in addition to those described above. The exemplary electronic auction system may, for example, also employ a "Floating Closing Time" feature whereby the auction for a particular item is automatically closed if no new bids are received within a predetermined time interval. This feature would typically be implemented in a manner similar to that used to close auctions of old items, as shown at step 53 in FIG. 6. This feature forces the bidding activity to occur within a shorter amount of time than would otherwise be achieved because bidders are aware that the item will automatically close if no new bids have been received in a timely manner. Thus, bidders have an incentive to stay active in the bidding process to avoid closure of an item before maximum, and most potentially winning, bids have been entered. The Floating Closing Time feature also allows more items to be auctioned during a period of time since each item is closed once bidding activity ceases; the bidding period is not protracted to an artificial length as is the case when an item closes at a preset date and time. The Floating Closing Time feature of the present invention may be employed either in conjunction with or independent of a fixed closing time for an item. When employed in conjunction with a fixed closing time, the auction is closed either

when the preset fixed time period has expired for the item or when no bidding activity has occurred within a preset time interval. This forces the bidding to cease at a particular time in case the bidding activity becomes artificially protracted.

[0056] Thus, a method and system for performing proxy bidding are disclosed. A general description of the present invention as well as an exemplary embodiment of the present invention has been set forth above. Those skilled in the art to which the present invention pertains will recognize and be able to practice additional variations in the methods and system described which fall within the teachings of this invention. For example, although the exemplary embodiment of the present invention chooses winning bids according to monetary amount included in the bid, preference for bids may also be determined according to time of submission, quantity of merchandise bid for, total bid value, or some other combination of these characteristics. Accordingly, all such modifications and additions are deemed to be within the scope of the invention which is to be limited only by the claims appended hereto.

What is claimed is:

1. A method of conducting an electronic auction, the method including:

receiving from a bidder, using an electronic auction system, a maximum bid amount the bidder is willing to pay for an item; and

continuously and automatically incrementing a proxy bid for the bidder by a preset bid increment to be greater than a current high bid when the current high bid is not associated with the bidder and the current high bid is not greater than the maximum bid amount.

2. The method of claim 1, wherein the bidder submits the maximum bid amount via a web-based bid form and via the Internet to the electronic auction system.

3. The method of claim 1, further comprising:

displaying the proxy bid on an merchandise catalog page.

4. The method of claim 1, wherein the maximum bid amount is not displayed to other bidders.

5. The method of claim 1, wherein the continuous incrementing of the proxy bid continues until the auction is closed.

6. The method of claim 1, wherein the preset bid increment is a percentage above a second highest bid.

7. An electronic auction system comprising:

a manager continuously and automatically to increment a proxy bid for an item to be auctioned, across a network, on the behalf of a bidder up to a maximum bid amount the bidder is willing to pay for the item.

8. The system of claim 7, wherein the proxy bid is incremented to be greater than a current high bid and not greater than the maximum bid amount.

9. The system of claim 7, wherein manager increments the proxy bid when the current high bid is not associated with the bidder.

10. The system of claim 7, wherein the proxy bid is a predetermined amount greater than the current high bid.

11. The system of claim 7, wherein the manager is to receive the maximum bid amount when an initial bid is placed by the bidder.

12. The system of claim 7, further comprising:

an electronic mail messenger to compose and generate an email message to the bidder, the email message including bid information informing the bidding of the proxy bid.

13. A machine-readable medium having executable instructions to cause one or more machines to perform a method of conducting an electronic auction, the method including:

receiving from a bidder, using an electronic auction system, a maximum bid amount the bidder is willing to pay for an item; and

continuously and automatically incrementing a proxy bid for the bidder by a preset bid increment to be greater than a current high bid when the current high bid is not associated with the bidder and the current high bid is not greater than the maximum bid amount.

14. The machine-readable medium of claim 13, wherein the bidder submits the maximum bid amount via a web-based bid form and via the Internet to the electronic auction system.

15. The machine-readable medium of claim 13, further comprising:

displaying the proxy bid to the bidder on an merchandise catalog page.

16. The machine-readable medium of claim 13, wherein the maximum bid amount is not displayed to other bidders.

17. The machine-readable medium of claim 13, wherein the continuous incrementing of the proxy bid continues until the auction is closed.

18. The machine-readable medium of claim 13, wherein the preset bid increment is a percentage above the second highest bid.

19. An electronic auction system comprising:

manager means for continuously and automatically incrementing a proxy bid for an item to be auctioned, across a network, on the behalf of a bidder up to a maximum bid amount the bidder is willing to pay for the item; and

storage means, coupled to the manager means, to store the proxy bid.

20. The system of claim 19, wherein the proxy bid is incremented to be greater than a current high bid and not greater than the maximum bid amount.

21. The system of claim 19, wherein manager performs the proxy bid when the current high bid is not associated with the bidder.

22. The system of claim 19, wherein the proxy bid is a predetermined amount greater than the current high bid.

23. The system of claim 19, wherein the manager means is to receive the maximum bid amount when an initial bid is placed by the bidder.

24. The system of claim 19, further comprising:

a messaging means for composing and generating an email message to the bidder, the email message includes bid information informing the bidding of the proxy bid.

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