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(54) Title: SYSTEM AND METHOD FOR HIGH-SPEED PARI-MUTUEL WAGERING

(57) **Abstract:** This disclosure provides a wagering system associated with a first wagering facility, the system communicably coupled with a network and including a memory operable to store betting odds on a plurality of wagering events hosted by the first wagering facility. The system further includes a processor coupled to the memory and operable to receive a first bet on a particular event via the network, the particular event comprising at least one of the wagering events hosted by the first wagering facility. If a second bet is received within a predetermined period of time after the first bet is received, then the processor recalculates the betting odds on the particular event based upon both of the first bet and the second bet. If a second bet is not received within a predetermined period of time after the first bet is received, then the processor recalculates the betting odds on the particular event based upon the first bet.

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## SYSTEM AND METHOD FOR HIGH-SPEED PARI-MUTUEL WAGERING

TECHNICAL FIELD OF THE INVENTION

This disclosure relates generally to the field of gaming and, more specifically, to a system and method for high-speed pari-mutuel wagering.

5 BACKGROUND OF THE INVENTION

Wagering on events such as horse races or jai alai, for example, is a large and growing industry in many parts of the world. Typical horse racing bets allow bettors to bet on a single horse or on several horses in a particular race or series of races. For instance, a bettor can bet on a particular horse to finish first (win), finish in the top  
10 two (place), or finish in the top three (show). A bettor may also make various combination bets with multiple horses, such as an exacta bet (covering the top two horses in order) or a trifecta bet (covering the top three horses in order). In addition, a bettor may bet on a series of races such as, for example, the daily double (winners of two consecutive races), the pick-three (winners of three consecutive races), and the  
15 pick-six (winners of six consecutive races).

In a pari-mutuel (“among ourselves”) wagering system, all bets regarding a particular event are aggregated, a percentage (or “take-out”) is taken by each facility at which the respective bet is made, and the remainder is distributed among the winning bettors. In other words, typical pari-mutuel betting systems, occasionally  
20 termed “totalisator” or “tote” systems, have bettors wagering against other bettors rather than against the house. This betting pool often includes bets made from a number of wagering facilities. Typically, bets sent from a non-host facility to the hosting facility experience delays in both transmission (such as through batch processing) and processing. The delays provide situations which may create potential  
25 for fraudulent betting practices and a general unease by the betting public.

The popularity of such betting systems may be influenced by the bettors perception of how robust the system is to fraud. If there is a perception that they will lose out because the system is not trustworthy then the system may be used less than if the system were perceived to be robust. It is also known that bettors may be more

likely to bet if there are new bets (such as those described above) that can be tried. As such, the industry that provides such betting systems may strive to provide a product that gives added interest to the bettor.

5        SUMMARY OF THE INVENTION

          In one embodiment, this disclosure provides a pari-mutuel wagering system that includes a first wagering facility communicably coupled with a network and operable to receive a bet on a wagering event hosted by a second wagering facility. The first wagering facility is further operable to transmit the bet to the second  
10        wagering facility via the network. The system further includes a clearinghouse communicably coupled with the network and operable to capture audit information associated with the bet from the network.

          In another embodiment, the disclosure provides a wagering system associated with a first wagering facility, the system communicably coupled with a network and  
15        including a memory operable to store betting odds on a plurality of wagering events hosted by the first wagering facility. The system further includes a processor coupled to the memory and operable to receive a first bet on a particular event via the network, the particular event comprising at least one of the wagering events hosted by the first wagering facility. If a second bet is received within a predetermined period of time  
20        after the first bet is received, then the processor recalculates the betting odds on the particular event based upon both of the first bet and the second bet. If a second bet is not received within a predetermined period of time after the first bet is received, then the processor recalculates the betting odds on the particular event based upon the first bet.

25        In yet another embodiment, the disclosure provides a method for conducting wagering. The method includes receiving at a first wagering facility a plurality of bets on a wagering event that is hosted by a second wagering facility, wherein the first wagering facility is coupled to the second wagering facility using a network. Each of the plurality of bets are transmitted individually to the second wagering facility using  
30        the network.

          The invention has several important advantages. Various embodiments of the invention may have none, some, or all of these advantages. One advantage of the

present invention is that it provides a high-speed wagering network capable of processing a large number of betting transactions on an individual, real-time basis. Another advantage of the present invention is that it may provide confidence to bettors that bets will not be placed after the event's commencement. Further, the present invention may automatically determine real-time betting odds, and facilitate the real-time communication thereof, as individual bets are occurring for events. Moreover, the present invention may allow for the capturing of audit information involving the individual bets. Yet another possible advantage of the present invention is that accounts among a plurality of wagering facilities may be quickly and systematically settled upon a predetermined schedule. The present invention may also provide increased security and redundant clear channel connections for a nationwide pari-mutuel wagering network.

An advantage of such an embodiment is that the system can help to ensure that the odds offered thereby are up-to-date. It will be appreciated that the betting odds offered by such wagering systems, which may be pari-mutuel, are influenced by the bets that have already been placed by other bettors. If the odds are not correctly reflected by the wagering system it is possible that financial loss will occur to the provider of the wagering system since it may be disadvantaged. The delays may exacerbate this situation since they may add to any improper reflection of the betting odds. Thus, systems according to such embodiments should help to alleviate this problem of potential financial loss.

In some embodiments the system may be further operable to generate a stop bet command signifying that no subsequent bets on the particular event will be accepted. Such an embodiment is advantageous since it may help to improve the security of the system. It will be appreciated that should bets be accepted after that bet has closed then the betting odds offered by the system may be affected and the potential for fraud arises. Moreover, the stop bet command may help to reduce network traffic since it will prevent further bets from being transmitted across the network.

In some embodiments, the system may be arranged to store audit information generated by the placing of a bet on the system. Such audit information may be advantageous because it can help to increase the traceability of bets placed and help to

prevent fraud. It may become easier to show that the system is being run correctly should the need arise.

Other technical advantages of the present invention will be readily apparent to one skilled in the art.

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#### BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present disclosure and its advantages, reference is now made to the following descriptions, taken in conjunction with the accompanying drawings, in which:

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FIGURE 1 illustrates an example pari-mutuel wagering system in accordance with one embodiment of the present disclosure;

FIGURE 2 is an example view of an audit log stored by a clearinghouse in the pari-mutuel system of FIGURE 1;

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FIGURE 3 illustrates an exemplary method for communicating bets between wagering facilities via the pari-mutuel system in accordance with one embodiment of the present invention;

FIGURE 4 illustrates an exemplary method for monitoring bets between wagering facilities with access to the pari-mutuel system in accordance with one embodiment of the present invention; and

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FIGURE 5 illustrates an exemplary method for determining settlements between wagering facilities with access to the pari-mutuel system in accordance with one embodiment of the present invention.

#### DETAILED DESCRIPTION OF THE DRAWINGS

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FIGURE 1 is a block diagram illustrating a pari-mutuel system 100 for high-speed communications between wagering facilities 102 or other betting or tote locations. Generally, pari-mutuel system 100 is any system that facilitates high-speed communications between a plurality of wagering facilities 102 to allow for individual bet 150 processing, real-time betting and updates, and automatic settlement processing. More specifically, pari-mutuel system 100 includes a plurality of wagering facilities 102 interconnected through hubs 106 and a network 108. At a high level, pari-mutuel system 100 is a system that allows any number of wagering

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facilities 102 to electronically participate in betting on a wagering event occurring at another wagering facility 102. For example, pari-mutuel system 100 may be a wagering system providing inter-tote communications. But, pari-mutuel system 100 may be an international, nationwide, regional, or local system without departing from the scope of this disclosure. In short, pari-mutuel system 100 is a high-speed system that allows real-time transmission of wagering information via bets 150 between wagering facilities 102 using hubs 106 and the advanced network 108.

Typically, bets 150 on wagering events occurring at any one of the wagering facilities 102 are communicated across network 108. The events may include horse racing, dog racing, or any other event that may be the subject of pari-mutuel wagering. Accordingly, bets 150 may be any appropriate pari-mutuel wager on the particular event such as, for example, bets for any suitable dollar amount and others. Bets 150 may be initially performed orally, in writing, electronically, or using any other wagering technique so long as a first wagering facility 102 may communicate an electronic form of bet 150 to a second wagering facility 102.

Wagering facility 102 is any location that hosts wagering events and/or allows bettors to wager on wagering events, even those at other facilities 102. For example, wagering facilities 102 may include horse tracks, dog tracks, off-track betting parlors, internet websites, or any other place where a wager may be transmitted to network 108. Typically, the wagering facility 102 that is hosting a particular wagering event determines the betting odds for various participants in the event. Based on these odds, non-hosting wagering facilities 102 (also referred to as simulcast facilities 102) accept bets 150 and, upon receipt, nearly immediately communicate each bet 150 to the host wagering facility 102, thereby affecting the odds in real-time. A simulcast facility 102 may transmit bets 150 to a host facility 102. This allows the host wagering facility 102 to recalculate the odds without delay. These recalculated odds may then be communicated to the betting public at the host facility 102 or at any of the other facilities 102 substantially in real-time. Moreover, this real-time individual transmission of bets 150 allows host wagering facility 102 to ensure that bets 150 are not placed after the event has commenced.

Each wagering facility 102 may include or be associated with a computer, such as one similar to server 110 (described in more detail below) to facilitate the

transmission of bets 150 and real-time calculation of odds based on bets 150. Of course, the computer at facility 102 may execute different software or processes or store and process different data (such as odds on wagering events and bets 150) from server 110 without departing from the scope of this disclosure. The present disclosure  
5 contemplates computers other than general purpose computers as well as computers without conventional operating systems. As used in this document, the term “computer” is intended to encompass a personal computer, workstation, network computer, or any other suitable processing device. Computer server 110 may be adapted to execute any operating system including UNIX, Windows, Linux, or any  
10 other suitable operating system. The computer may be located on-site or remote. Moreover, “computer” and “facility 102” may be used interchangeably as appropriate.

In certain embodiments, wagering facility 102 is communicably coupled with network 108 through one hub 106. Accordingly, each facility 102, or the associated computer, may also include one or more interfaces for communicating with other  
15 computer systems, such as other wagering facilities 102, hub 106, other off-track betting locations 112 not directly connected to hub 106, or any other suitable component of pari-mutuel system 100. The interface may comprise logic encoded in software and/or hardware in a suitable combination and operable to communicate with network 108 via connection 114. More specifically, the interface may comprise  
20 software supporting one or more communication protocols associated with network 108 and hub 106 or hardware operable to communicate physical signals.

Wagering facility 102 includes one or more betting terminals 103. As used herein, betting terminal 103 is any window, slot, sign-in sheet, card-reader, auctioning terminal, or device operable to receive bets 150 from one or more bettors. As used in  
25 this disclosure, betting terminal 103 may further encompass a personal computer, touch screen terminal, workstation, network computer, kiosk, wireless data port, cell phone, personal data assistant (PDA), one or more processors within these or other devices, or any other suitable processing device. For example, betting terminal 103 may comprise a computer that includes an input device, such as a keypad, touch  
30 screen, mouse, or other device that can accept information, and an output device that conveys information associated with the operation of system 100, including digital data and visual information. Both the input device and output device may include



fixed or removable storage media such as a magnetic computer disk, CD-ROM, or other suitable media to both receive input from and provide output to users of terminals 103 through the display. It will be understood that there may be any number of terminals 103 located in or communicably coupled to each wagering facility 102. Further, "betting terminal 103" and "bettor" may be used interchangeably as appropriate without departing from the scope of this disclosure. But this disclosure contemplates that many bettors may use one terminal 103 to communicate bets 150 on the same wagering event.

Hub 106 is generally any aggregation point or other location that facilitates various simulcast or real-time communications between facilities 102. Hub 106 may comprise a data center, a processing facility, a networking point, an administration office, or any other site operable to provide links between network 108 and at least a subset of facilities 102. For example, system 100 may include a plurality of hubs 106, with each facility 102 being primarily associated with one of the plurality of hubs 106. In one embodiment, hub 106 may be co-located with one of wagering facilities 102. Accordingly, hub 106 may include any number of network devices such as, for example, routers, bridges, hubs, switches, servers, gateway, IP telephones, access control devices, and any other suitable network devices. Moreover, each hub 106 is communicably coupled to network 108 via one or more internodal trunks 104. Internodal trunks 104 may comprise any wireless or wireline link (for example a T-1 line) using any appropriate protocol. Trunks 104 may provide redundancy to help ensure that communications flow quickly and seamlessly. Further, hub 106 may handle tasks such as routing, protocol conversions, security, encryption/decryption, and other suitable functions and may also use any suitable handshakes, logins, and/or other appropriate hardware and/or software protocols so long as hub 106 remains operable to facilitate communication of bets from a first wagering facility 102 to a second wagering facility 102. Therefore, hub 106 provides a high-speed, reliable link between a plurality of wagering facilities 102 and network 108.

Network 108 facilitates wireless or wireline communication between the plurality of wagering facilities 102 and/or hubs 106. Indeed, while illustrated as residing between hubs 106, network 108 may be further located between hub 106 and the one or more associated wagering facilities 102 without departing from the scope

of the disclosure. Also, while not illustrated, network 108 may further include hubs 106. In other words, network 108 encompasses any network, networks, or sub-network operable to facilitate communications between wagering facilities 102 and clearinghouse 106. Network 108 may utilize diverse carriers and include perimeters  
5 secured with a combination of access lists and IPSec tunnels without departing from the scope of the disclosure. Also, network 108 may communicate, for example, Internet Protocol (IP) packets, Frame Relay frames, Asynchronous Transfer Mode (ATM) cells, voice, video, data, and other suitable information between network addresses. Network 108 may include one or more local area networks (LANs), radio  
10 access networks (RANs), metropolitan area networks (MANs), wide area networks (WANs), all or a portion of the global computer network known as the Internet, and/or any other communication system or systems at one or more locations.

Returning to hubs 106, each hub 106 may also be a clearinghouse that automatically monitors and audits all bets 150 being transmitted across network 108  
15 and determines the settlement of accounts between wagering facilities 102. Clearinghouse 106 may capture audit information on bets 150 by monitoring network traffic, receiving copies of bets 150 from the appropriate wagering facility 102, receiving audit information from wagering facilities 102 or hubs 106, or through any other appropriate technique. Clearinghouse 106 may also electronically settle  
20 accounts between wagering facilities using results from the relevant wagering events, the captured audit information associated with the events, and contract parameters in place among facilities 102. For example, clearinghouse 106 may include a central server 110 that is operable to store various contract parameters and audit information and automatically determine settlement of accounts between facilities 102 based on  
25 this stored information.

Server 110 comprises any local or remote computer operable to audit and process bets 150 and that is communicably coupled to network 108. For example, server 110 may be a general-purpose personal computer (PC), a Macintosh, a workstation, a Unix-based computer, a server computer, or any other suitable device.  
30 FIGURE 1 provides merely one example of computers that may be used with the disclosure. For example, although FIGURE 1 illustrates one server 110 that may be used with the disclosure, pari-mutuel system 100 can be implemented using

computers other than servers, as well as a server pool. According to one embodiment, server 110 may be a remote web server. In the illustrated embodiment, server 110 is operable to retrieve and store audit information in memory 120 and generate settlements based on processed bets 150.

5           Memory 120 may include any memory or database module and may take the form of volatile or non-volatile memory including, without limitation, magnetic media, optical media, random access memory (RAM), read-only memory (ROM), removable media, or any other suitable local or remote memory component. In the illustrated embodiment, memory 120 includes at least auction log 130 (described in  
10 more detail in FIGURE 2), contract files 135, and account files 140, but may include any other suitable data. At a high level, auction log 130 is any file that stores any appropriate audit information involving bets 150 and the processing thereof.

          Contract files 135 comprise logical descriptions (or data structures) of contracts for settling accounts between at least two wagering facilities 102. More  
15 specifically, contract files 135 includes contract parameters and identifiers of wagering facilities 102. Contract parameters may comprise any logic, rules, algorithms, or data operable to be processed by system 100 to determine the appropriate settlement between the respective facilities 102. For example, one contract parameter may comprise a simulcast fee charged by a first wagering facility  
20 102 hosting the wagering event to a second wagering facility 102. Contract files 135 may be arranged in any suitable format and stored in any physical or logical data storage operable to be defined, processed, or retrieved by externally implemented code. Contract files 135 may also comprise one or a plurality of tables or files stored on one server 110 or across a plurality of servers 110. Moreover, contract files 135  
25 may be stored as local or remote files without departing from the scope of this disclosure.

          Account files 140 comprises logical descriptions (or data structures) of accounts for wagering facilities 102. For example, each wagering facility 102 may be associated with one or more accounts represented in account files 140. Account files  
30 140 may be arranged in any suitable format and stored in any physical or logical data storage operable to be defined, processed, or retrieved by externally implemented code. Account files 140 may also comprise a plurality of tables or files stored on one

server 110 or across a plurality of servers 110. Moreover, account files 140 may be local or remote without departing from the scope of this disclosure.

Server 110 also includes processor 125. Processor 125 executes instructions and manipulates data to perform the operations of server 110 such as, for example, a central processing unit (CPU). Although FIGURE 1 illustrates a single processor 125 in server 110, multiple processors 125 may be used according to particular needs, and any reference to processor 125 is meant to include multiple processors 125 where applicable. In certain embodiments, processor 125 executes settlement engine 145 implementing any suitable process using any appropriate logic, rules, or algorithms. Settlement engine 145 could include any software, firmware, or combination thereof operable to audit bets 150 and at least partially settle accounts between wagering facilities 102. Settlement engine 145 may be further operable to encrypt or decrypt communications such as, for example, bets 150 or audit information.

In one aspect of operation, a first wagering facility 102 hosts a wagering event, such as a horse race, dog race, and jai alai. First facility 102 automatically computes the odds for the participants in the event and communicates these odds to at least a subset of non-host wagering facilities 102. The term "automatically," as used herein, generally means that the appropriate processing is substantially performed by at least part of pari-mutuel system 100. It should be understood that "automatically" further contemplates any suitable user or bettor interaction with pari-mutuel system 100 without departing from the scope of this disclosure. A second one of the wagering facilities 102 receives a bet 150 on the wagering event from a bettor, often at betting terminal 103. Second wagering facility 102 transmits electronic bet 150 to first wagering facility 102 through hub 106 and network 108. As described above, this transmission may occur substantially in real-time and on a bet-by-bet basis. During transmission, clearinghouse 106 captures audit information on bet 150 and stores the captured information in audit log 130.

For example, a bettor places a \$100.00 bet 150 on a particular horse race hosted by the first wagering facility 102. In this example, bet 150 is placed at a simulcast facility 102 such as a second wagering facility 102. This \$100.00 bet 150 is transmitted in real-time to the first wagering facility 102. Clearinghouse 106 captures audit information from network 108 such that audit log 130 may include a transaction

identifier, an identifier of the first wagering facility, an identifier of the second wagering facility, a terminal ID, an identifier of the wagering event, the bet (*e.g.*, a win bet on horse #3), an amount of the bet, a timestamp, a bettor ID (when available), and a hub. Further, at any appropriate time, clearinghouse 106 deducts a take-out or commission associated with the second facility 102 (*e.g.*, 15%) from the bet amount, resulting in \$85.00. In this case, the deducted \$15.00 belongs to second wagering facility 102 for initiating bet 150.

Once first wagering facility 102 receives bet 150, first facility 102 recalculates the odds on the particular event specified by bet 150. According to certain embodiments, first facility 102 identifies at least a subset of one or more stored bets 150 that are associated with the particular event. First wagering facility 102 then recalculates the odds in substantially real-time based on the identified subset of stored bets 150 and received bet 150. In certain embodiments, if a second bet 150 is received within a predetermined period of time after first bet 150 is received (*e.g.*, between 0 and 15 seconds), then first wagering facility may recalculate based on first and second bets 150. Once recalculated, first facility 102 automatically transmits the odds to at least the second wagering facility 102 via network 108. First facility 102 may also present the recalculated odds to the betting public at host facility 102. In one embodiment, wagering facility 102 recalculates the odds dynamically and in real-time upon receiving bet 150. In other embodiments, facility 102 recalculates the odds at particular intervals of time, but generally no later than the commencement of the particular event such as the horse race.

This near-immediate receipt of bets 150 from any non-host facilities 102 and recalculation and transmission of odds based on individual bets 150 may continue until first wagering facility 102 determines that betting should stop. In one embodiment, first facility 102 may itself refuse bets 150 already communicated from other facilities 102 such as, for example, through an internal "stop bet" command 155. For example, upon commencement of the event or a predetermined period of time prior to the commencement of the event, host facility 102 may generate a "stop bet" command 155 signifying that no subsequent bets 150 will be accepted. If host facility 102 then receives bets 150, such as from other wagering facilities 102 via network 108, then host wagering facility denies bet 150.

In another embodiment, first facility 102 may generate and communicate a “stop bet” command 155 to network 108 based on the commencement of the particular event. The “stop bet” command 155 generally tells network 108 to refuse any future bets 150 from any of the non-host wagering facilities. In yet another embodiment, first facility 102 may communicate the “stop bet” command 155 to second non-hosting facilities 102. Occasionally, second wagering facility 102 may transmit a received bet 150 prior to receiving the “stop bet” command 155. In this case, first wagering facility 102 may first determine or verify that bet 150 was actually communicated prior to issuance of the “stop bet” command 155. If so, then first wagering facility 102 may accept bet 150 and perform the recalculation of the odds for the event. If first facility 102 determines that bet 150 was not received prior to issuance of the “stop bet” command 155, then first wagering facility 102 may refuse bet 150. Once the event is completed, first wagering facility 102 transmits the results to clearinghouse 106 and appropriate non-host wagering facilities 102.

At any predetermined time (such as once a week), clearinghouse 106 processes the results of one or more events to settle the accounts of the various facilities 102 involved in the events or betting thereon. In one embodiment, processor 125 may select a first subset of bets from audit log 130 based on the first (or host) wagering facility 102 and a second one of the non-host wagering facilities 102. Next, processor 125 identifies the appropriate contract parameters from contract files 135 based on the two facilities 102. Using these parameters, processor 125 generates a settlement, or a calculated transfer of funds, between first and second facility 102. Next, processor 125 may debit or credit the accounts of each facility 102 in account files 140 using Electronic Funds Transfer (EFT) techniques. When appropriate, clearinghouse 106 may communicate the settlement, now reflected in account files 140, to one or more banks to initiate the transfer of funds. Clearinghouse 106 may continue this processing until the accounts between the first wagering facility 102 and each non-host facility 102, which transmitted bets 150, are settled. Clearinghouse 106 may communicate the results of these settlements to the appropriate wagering facilities 102.

Returning to the example \$100.00 bet on the particular horse, first wagering facility 102 may transmit a message to clearinghouse 106 to the effect that bet 150

lost. Clearinghouse 106 collects i) the appropriate contract parameters from contracts files 135 between first and second wagering facility 102; and ii) the audit information associated with exemplary bet 150. Based on the contract parameters, clearinghouse 106 may determine that there is a simulcast fee of 3%, or \$3.00 of the example bet amount (\$100.00), due to first wagering facility 102. Accordingly, clearinghouse 106 calculates that second wagering facility 102 owes first wagering facility 102 \$88.00, or \$100.00 (original bet) – 15.00 (take-out) + 3.00 (simulcast fee), leaving \$12.00 of the bet amount in the account of second wagering facility 102. Clearinghouse 106 then updates the account of each facility 102 in account files 140 and/or facilitates an EFT between the facilities 102 based on the determined settlement.

In the alternative, first wagering facility 102 may transmit a message to clearinghouse 106 to the effect that bet 150 won. Clearinghouse 106 collects i) the appropriate contract parameters from contracts files 135 between first and second wagering facility 102; and ii) the audit information associated with exemplary bet 150. Based on the contract parameters, clearinghouse 106 may determine that there is a simulcast fee of 3%, or \$3.00 of the example bet amount, due to first wagering facility 102. Accordingly, clearinghouse 106 calculates that second wagering facility 102 owes first wagering facility 102 \$88.00, or \$100.00 (original bet) – 15.00 (take-out) + 3.00 (simulcast fee). But, since bet 150 won, clearinghouse 106 further determines that first wagering facility 102 owes the winning amount (e.g. \$400.00 on 3-1 odds) to second wagering facility 102. Accordingly, clearinghouse 106 determines that first wagering facility 102 owes second wagering facility 102 \$312.00 (\$400.00 – 88.00). Clearinghouse 106 then updates the account of each facility 102 in account files 140 and/or facilitates an EFT between the facilities 102 based on the determined settlement.

FIGURE 2 illustrates one example of audit log 130 in accordance with one embodiment of system 100. In general, system 100 uses audit log 130 to securely store and process audit information of bets 150 traversing system 100. This audit information may allow system 100 to ensure security and accuracy of bets 150, quickly respond to requests from agencies, locate and correct system issues, or other appropriate processes. In the illustrated embodiment, audit log 130 is a multi-dimensional data structure that includes at least one audit record. But audit log 130

may be arranged in any appropriate format. In this example, each audit record includes data, pointers, references, or any other identifier of a transaction, first wagering facility 102, second wagering facility 102, a terminal 103, the wagering event, the bet (*e.g.*, a win on horses #2), an amount of the bet, a timestamp, a bettor (when available), and a hub 106. It will be understood that each audit record may include none, some, or all of the example data. In one embodiment, each audit record may include links, foreign keys, or pointers to another table. The audit records illustrated in audit log 130 are merely exemplary and system 100 contemplates any other suitable audit component to allow for suitable auditing of bets 150. Moreover, audit log 130 may be separated into multiple tables or files without departing from the scope of the invention.

FIGURES 3 and 4 are flowcharts illustrating example methods 300 and 350, respectively, for various aspects of electronic, real-time processing of pari-mutuel wagering. First, FIGURE 3 illustrates method 300, which generally describes the communication and processing of bets between facilities 102 via the high-speed pari-mutuel network 108 in accordance with one embodiment of the present invention. Second, FIGURE 4 illustrates method 350, which generally describes the monitoring of bets between facilities 102 with access to pari-mutuel system 100 in accordance with one embodiment of the present invention. The following descriptions focus on the operation of particular components of pari-mutuel system 100 in performing methods 300 and 350. But pari-mutuel system 100 contemplates using any appropriate combination and arrangement of logical elements to implement some or all of the described functionality and techniques.

At a high level, method 300 includes the receiving and transmission of individual bets 150, on an event hosted by first wagering facility 102, in real-time and the real-time recalculation of odds based on each bet 150. Method 300 begins at step 302, where second wagering facility 102 receives a first bet 150 on the event hosted by first wagering facility 102. As described above, first bet 150 may be manually received at a betting window, electronically received from a betting terminal 103, or received using any other appropriate technique. After any appropriate processing, second wagering facility 102 transmits bet 150 to first wagering facility 102 through the appropriate hub 106 in network 108. First wagering facility 102 then dynamically



recalculates the odds based on the received bet 150 and any other bets 150 in memory at step 308. Next, at step 310, second wagering facility 102 displays the new odds to current attendees or bettors on the event. First wagering facility 102 then transmits, often in real-time, the recalculated odds to one or more wagering facilities 102, which are not hosting the event, via network 108.

At step 312, second wagering facility 102 receives the recalculated odds from first facility 102. Next, second wagering facility 102 receives another bet 150 on the event at step 314. At decisional step 316, second wagering facility 102 determines if first wagering facility 102 has stopped accepting bets 150 for the particular event. One way first facility 102 may indicate this is by issuing an internal "stop bet" command 155 and issuing "bet is rejected" message to facilities 102 transmitting subsequent bids 150. The "stop bet" command 155 may also have been communicated to network 108, one or more hubs 106, and/or one or more wagering facilities 102. In other words, second wagering facility 102 may receive an error message from first wagering facility 102 based on an attempted transmission of bet 150, may determine if the "stop bet" command 155 was communicated by querying hub 106, or through any other suitable technique. If betting was not stopped by first wagering facility 102, then processing returns to step 304. Otherwise, second wagering facility 102 communicates the "bet is rejected" message to the respective bettor and refuses bet 150. This "bet is rejected" message may be verbal, electronic, or in any other appropriate format.

Once the wagering event is over, first wagering facility 102 identifies the winner of the wagering event at step 320. Then, based upon the results of the event, first wagering facility 102 performs pari-mutuel processing to determine results information at step 322. In one embodiment, the pari-mutuel processing may include aggregating all bets 150 involving the particular event and determining the distribution of at least a portion of bets 150 among the winning bettors. Of course, any pari-mutuel processing may be used. At step 324, second wagering facility 102 receives the determined results information from first wagering facility 102 via network 108. Second wagering facility 102 may distribute the expected winnings to the winning bettors and have accounts automatically settled by clearinghouse 106, as described in more detail in FIGURE 5.

Generally, method 350 includes clearinghouse 106 capturing audit information on bets 150 traversing network 108. Method 350 begins at step 352, where clearinghouse 106 monitors bets 150 transmitted between first and second facilities 102 across network 108. At step 354, clearinghouse 106 captures audit information of bet 150 using any suitable technique. For example, clearinghouse 106 may capture the desired information by parsing and scanning the electronic bet 150, receiving a copy of bet 150 from facility 102, or through any other technique. Once captured, clearinghouse 106 stores the audit information in audit log 130 at step 356. At any appropriate time, clearinghouse 106 receives results for the particular event, which occurred at first wagering facility 102, at step 358. Further, although method 350 is illustrated as continuing on to step 358, it should be understood that clearinghouse 106 may continue to monitor network 108 by performing steps 352-356 in parallel with step 358.

FIGURE 5 illustrates an example method 400 for determining settlements between wagering facilities 102 with access to the network 108 in accordance with one embodiment of the present invention. Generally, clearinghouse 106 processes all unprocessed bets 150 using the captured audit information to systematically settle accounts between appropriate facilities 102.

Method 400 begins at step 405, where clearinghouse 106 identifies a first wagering facility 102. Clearinghouse 106 then selects audit information, captured from the monitored bets 150, involving the identified wagering facility 102 as the host facility 102 at step 410. Next, at step 415, clearinghouse 106 identifies a first non-host facility 102 based on the selected audit information. Clearinghouse 106 then selects a subset of the audit information involving the identified non-host facility 102 at step 420. Next, clearinghouse 106 identifies an electronic contract, from contract files 135, between the identified host and non-host wagering facilities 102 at step 425. For example, server 110 may select the appropriate contract parameters, such as the simulcast fee, from contract files 135 that are stored in memory 120. Clearinghouse 106 then processes the selected subset of audit information based on the identified contract parameters and results to produce a settlement of accounts between the two facilities 102 at step 430. At decisional step 435, clearinghouse 106 determines if there are unprocessed non-host facilities 102 remaining in the audit information

selected at step 410. If there are, then clearinghouse 106 identifies the next non-host facility 102 at step 440 and processing returns to step 420.

5 If all the particular non-host facilities 102 have been processed for the selected audit information, then at step 445, clearinghouse 106 selects alternative audited information, captured from the monitored bets 150, involving the wagering facility 102 (identified in step 405) as the non-host facility 102. Next, at step 450, clearinghouse 106 identifies a first host facility 102 based on the selected audit information. Clearinghouse 106 then selects a subset of the audit information involving the identified host facility 102 at step 455. Next, clearinghouse 106  
10 identifies an electronic contract, from contract files 135, between the identified host and non-host wagering facilities 102 at step 460. Clearinghouse 106 then processes the selected subset of audit information based on the identified contract parameters and results to produce a settlement of accounts between the two facilities 102 at step 465. At decisional step 470, clearinghouse 106 determines if there are unprocessed  
15 host facilities 102 remaining in the audit information selected at step 445. If there are, then clearinghouse 106 identifies the next non-host facility 102 at step 475 and processing returns to step 455. Otherwise, at decisional step 480, clearinghouse 106 determines if there are unprocessed facilities 102. If there are, clearinghouse 106 identifies the next facility 102 at step 485 and processing returns to step 410.

20 Otherwise, clearinghouse 106 determines that accounts have been settled between the plurality of facilities 102 of system 100 and processing ends. It should be understood that clearinghouse 106 may use intelligence to ensure that facilities are not inefficiently processed or may aggregate settlements determined at steps 430 and 465 to generate a single settlement between the respective facilities 102. In certain  
25 embodiments, clearinghouse 106 may facilitate a funds transfer between the facilities 102 through an EFT process for banks at any appropriate time. Also, clearinghouse 106 may communicate settlement 160 to the respective non-host facility 102 and the host wagering facility 102.

30 The preceding flowcharts and accompanying description illustrate only exemplary methods 300, 350, and 400. Pari-mutuel system 100 contemplates using any suitable technique for performing these and other tasks. Accordingly, many of the steps in these flowcharts may take place simultaneously and/or in different orders

than as shown. Moreover, pari-mutuel system 100 may use methods with additional steps, fewer steps, and/or different steps, so long as the methods remain appropriate.

Although this disclosure has been described in terms of certain embodiments and generally associated methods, alterations and permutations of these embodiments  
5 and methods will be apparent to those skilled in the art. Accordingly, the above description of example embodiments does not define or constrain this disclosure. Other changes, substitutions, and alterations are also possible without departing from the spirit and scope of this disclosure.

Throughout this specification and the claims which follow, unless the context  
10 requires otherwise, the word "comprise", and variations such as "comprises" and "comprising", will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

The reference to any prior art in this specification is not, and should not be taken  
15 as, an acknowledgement or any form of suggestion that the prior art forms part of the common general knowledge in Australia.

WHAT IS CLAIMED IS:

## 1. A system comprising:

a host apparatus associated with a first wagering facility and for determining, from received bets, betting odds for a wagering event hosted by the first wagering facility, the host apparatus comprising at least one processing device and a memory electronically coupled to the at least one processing device and having software stored thereon that when executed by the at least one processing device directs the at one processing device to:

generate a stop bet command that indicates no further bets will be accepted on the wagering event;

after generating the stop bet command, receive from a remote apparatus bet data relating to a bet on the wagering event, wherein the remote apparatus is associated with a second wagering facility, and wherein the bet data includes a time element that corresponds to a time at which the bet data was transmitted by the remote apparatus to the host apparatus;

compare the time element in the bet data with a time at which the stop bet command was generated;

determine, based at least in part on the comparison of the time element in the bet data with the time at which the stop bet command was generated, whether the bet data was transmitted by the remote apparatus prior to the generation of the stop bet command or whether the bet data was transmitted by the remote apparatus after the generation of the stop bet command;

when the bet data is transmitted by the remote apparatus prior to the generation of the stop bet command, accept the bet and calculate betting odds for the wagering event based at least in part on the bet; and

when the bet data is transmitted by the remote apparatus after the generation of the stop bet command, deny the bet.

2. The system of claim 1, wherein the software, when executed by the at least one processing device, further directs the at least one processing device to:

transmit the stop bet command to at least the remote apparatus.

3. The system of claim 2,

wherein the remote apparatus is operable to:

receive from bettors bets on the wagering event and to transmit the  
bets to the host apparatus; and

wherein the remote apparatus is further operable to:

receive the stop bet command transmitted by the host apparatus; and  
deny bets on the wagering event that are received from bettors after the  
stop bet command is received from the host apparatus.

4. The system of claim 1, in which the software, that when executed by the at least  
one processing device, further directs the at least one processing device to:

transmit a bet is rejected message to the remote apparatus in the event the bet is  
denied.

5. The system of claim 4,

wherein the remote apparatus is operable to:

receive from bettors bets on the wagering event and to transmit the  
bets to the host apparatus; and

wherein the remote apparatus is further operable to:

receive the bet is rejected message transmitted by the host apparatus; and  
deny bets on the wagering event that are received from bettors after the bet  
is rejected message is received from the host apparatus.

6. The system of claim 1, wherein generating the stop bet command comprises  
generating the stop bet command upon commencement of the wagering event.

7. The system of claim 1, wherein generating the stop bet command comprises  
generating the stop be command a predetermined period of time prior to a

commencement of the wagering event.

8. The system of claim 1, wherein the software, when executed by the at least one processing device, further directs the at least one processing device to:

receive a first bet on the wagering event and a second bet on the wagering event, wherein the second bet is received after the first bet; and

5 calculate betting odds for the wagering event based at least in part on the first bet but not the second bet if the second bet is not received within a predetermined period of time after the first bet is received; or

calculate betting odds for the wagering event based at least on the first bet and the second bet if the second bet is received within the predetermined period of time after the  
10 first bet is received.

9. The system of claim 8, wherein the predetermined period of time is from 0 to 15 seconds.

15 10. The system of claim 8, wherein the software, when executed by the at least one processing device, further directs the at least one processing device to:

communicate the calculated betting odds to at least the remote apparatus.

11. The system of claim 8, wherein at least one of the first bet and the second bet  
20 is received from the remote apparatus.

12. The system of claim 8, wherein the first bet and the second bet are received individually from the remote apparatus.

13. A method comprising:

generating by a host apparatus a stop bet command that indicates no further bets will be accepted on a wagering event, wherein the host apparatus is associated with a first wagering facility that hosts the wagering event, and wherein the host apparatus  
5 determines, from received bets, betting odds for the wagering event;

after generating the stop bet command, receiving by the host apparatus from a remote apparatus bet data relating to a bet on the wagering event, wherein the remote apparatus is associated with a second wagering facility, and wherein the bet data includes a time element that corresponds to a time at which the bet data was transmitted by the  
10 remote apparatus to the host apparatus;

comparing by the host apparatus the time element in the bet data with a time at which the stop bet command was generated;

determining by the host apparatus, based at least in part on the comparison of the time element in the bet data with the time at which the stop bet command was generated,  
15 whether the bet data was transmitted by the remote apparatus prior to the generation of the stop bet command or whether the bet data was transmitted by the remote apparatus after the generation of the stop bet command;

when the bet data is transmitted by the remote apparatus prior to the generation of the stop bet command, accepting by the host apparatus the bet and calculating betting  
20 odds for the wagering event based at least in part on the bet; and

when the bet data is transmitted by the remote apparatus after the generation of the stop bet command, denying by the host apparatus the bet.

14. The method of claim 13, further comprising transmitting by the host apparatus  
25 the stop bet command to at least the remote apparatus.

15. The method of claim 14,  
wherein the remote apparatus is operable to receive from bettors bets on the wagering event and to transmit the bets to the host apparatus; and  
30 wherein the method further comprises:



receiving by the remote apparatus the stop bet command transmitted by the host apparatus; and

denying by the remote apparatus bets on the wagering event that are received from bettors after the stop bet command is received from the host apparatus.

16. The method of claim 13, further comprising transmitting by the host apparatus a bet is rejected message to the remote apparatus in the event the bet is denied.

17. The method of claim 16, wherein the remote apparatus is operable to receive from bettors bets on the wagering event and to transmit the bets to the host apparatus; and wherein the method further comprises:

receiving by the remote apparatus the bet is rejected message transmitted by the host apparatus; and

denying by the remote apparatus bets on the wagering event that are received from bettors after the bet is rejected message is received from the host apparatus.

18. The method of claim 13, wherein generating the stop bet command comprises generating the stop bet command upon commencement of the wagering event.

19. The method of claim 13, wherein generating the stop bet command comprises generating the stop be command a predetermined period of time prior to a commencement of the wagering event.

20. The method of claim 13, further comprising: receiving by the host apparatus a first bet on the wagering event and a second bet on the wagering event, wherein the second bet is received after the first bet; and

calculating by the host apparatus betting odds for the wagering event based at least in part on the first bet but not the second bet if the second bet is not received within a predetermined period of time after the first bet is received; or

5 calculating by the host apparatus betting odds for the wagering event based at least on the first bet and the second bet if the second bet is received within the predetermined period of time after the first bet is received.

10 21. The method of claim 20, wherein the predetermined period of time is from 0 to 15 seconds.

22. The method of claim 20, further comprising communicating by the host apparatus the calculated betting odds to at least the remote apparatus.

15 23. The method of claim 20, wherein at least one of the first bet and the second bet is received from the remote apparatus.

24. The method of claim 20, wherein the first bet and the second bet are received individually from the remote apparatus.

20 25. A system substantially as hereinbefore described.

26. A method substantially as hereinbefore described.

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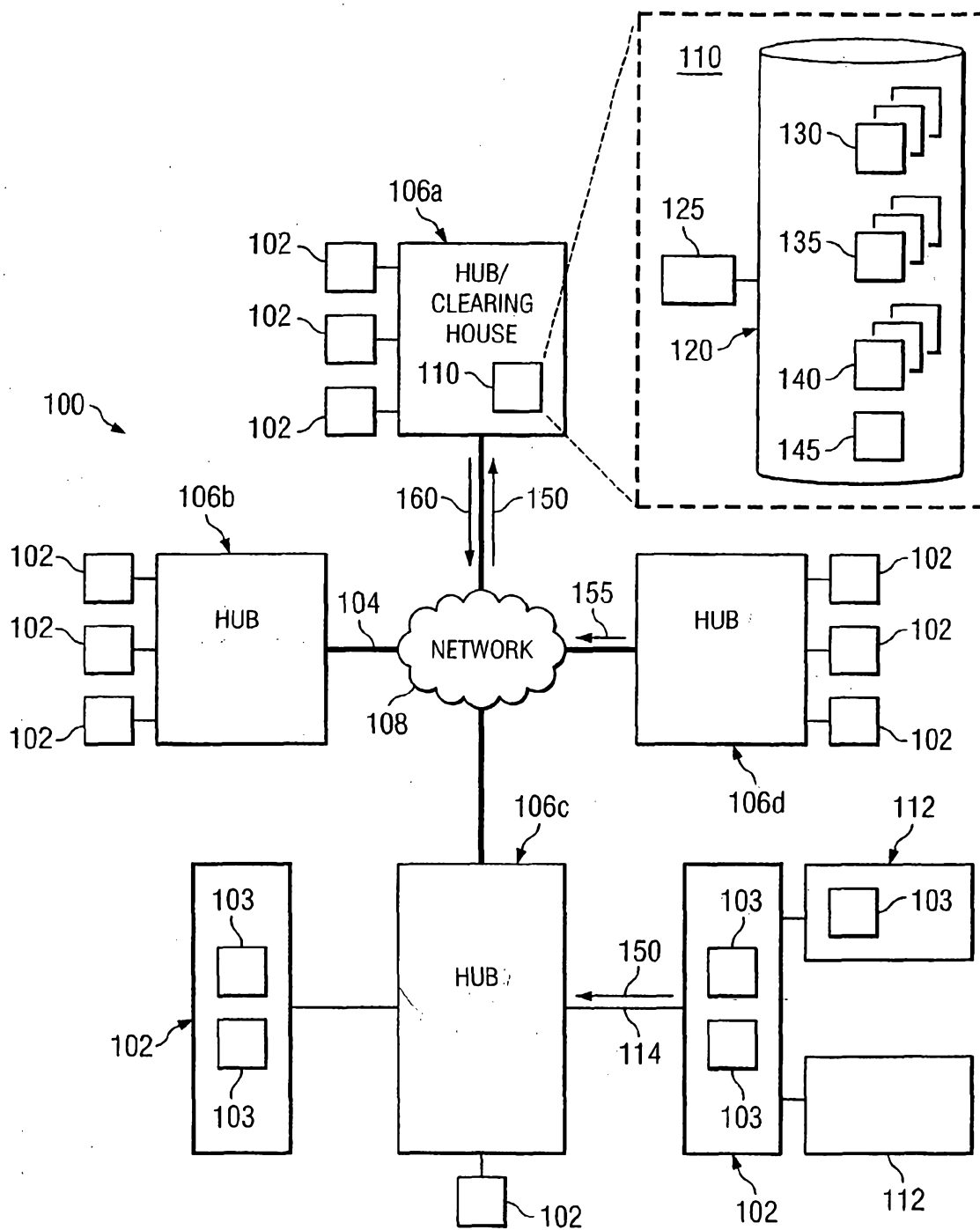


FIG. 1

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130

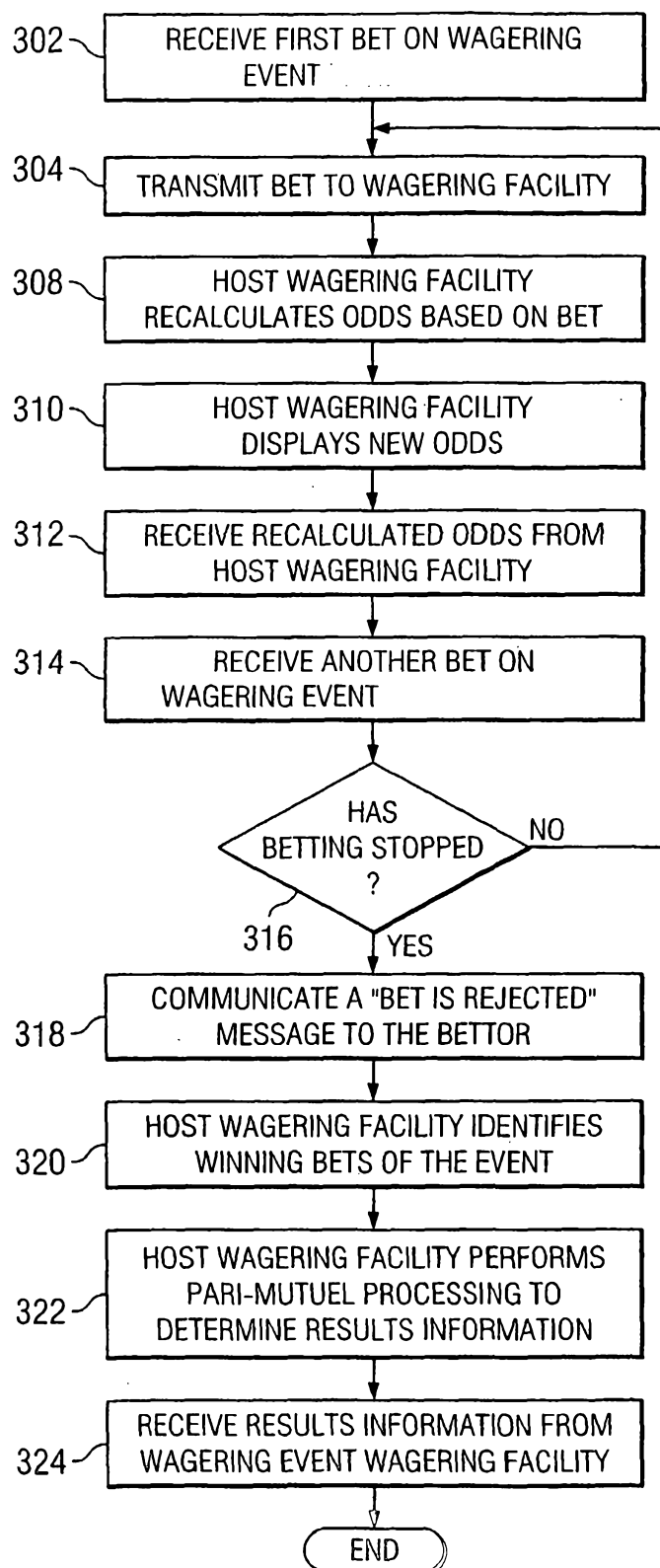
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2	MED	MIA	B01	142	1,2,3	1000.00	062204 1421 01.23	5466...	NY
3	LSP	MED	12B	13X	2	20.00	062204 1530 01.23	123...	ATL
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
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FIG. 2

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300

FIG. 3



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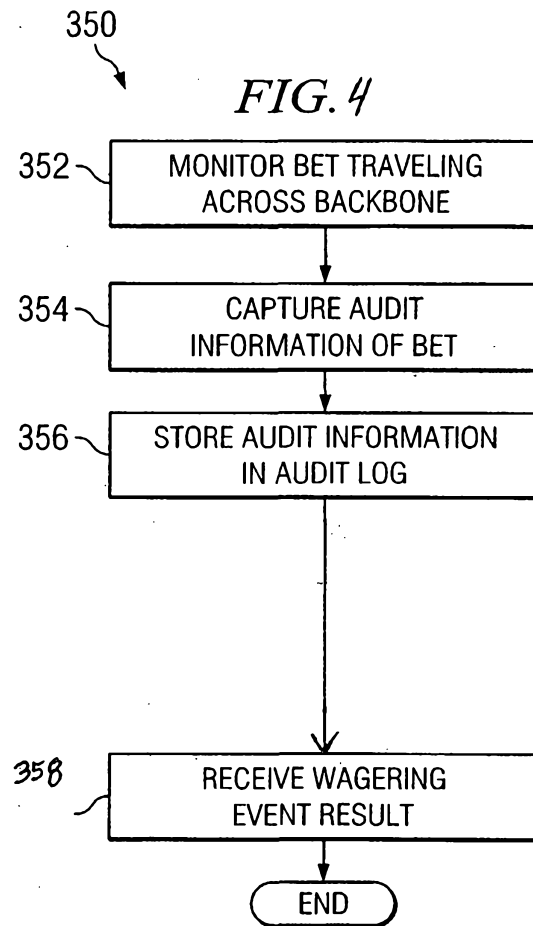


FIG. 5 5/5

