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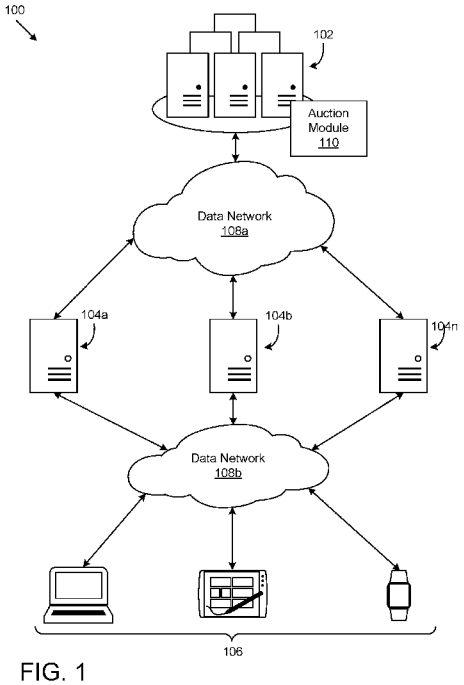


FIG. 1

(57) **Abstract**: An apparatus, system, method, and program product is disclosed for continuous bidding portal. A method (400) includes posting (402) a listing for an item for sale to a plurality of auction platforms (104). Each of the plurality of auction platforms (104) incompatible with one another such that each auction platform (104) is unable to communicate with a different auction platform (104). A method (400) includes receiving (404) a notification from an auction platform (104) of the plurality of auction platforms (104) in response to an auction event associated with the listing. A method (400) includes updating (406) information for the listing on one or more different auction platforms (104) of the plurality of auction platforms (104) in response to receiving the notification.

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# CONTINUOUS BIDDING PORTAL

## CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to United States Provisional Patent Application Number 62/211,316 entitled "CONTINUOUS BIDDING PORTAL" and filed on Aug. 28, 2015, for Scott Sweeder, which is incorporated herein by reference.

## FIELD

[0002] The subject matter disclosed herein relates to online auctions and more particularly relates to a continuous bidding platform using a plurality of incompatible auction platforms.

## BACKGROUND

[0003] Online auctions allow users to post items to sell and/or view items for sale posted by other users. There may be various different auction platforms, each built with different technologies, e.g., web technologies, which may make them incompatible with one another. For example, a user may post a car for sale on multiple auction platforms, but when a bid for the car is received on an auction platform, the bid information may not be transmitted or shared with the other auction platforms where the car is posted for sale.

## BRIEF SUMMARY

[0004] An apparatus for a continuous auction portal is disclosed. A method and program product perform the functions of the apparatus. A method includes posting a listing for an item for sale to a plurality of auction platforms. Each of the plurality of auction platforms is incompatible with one another such that each auction platform is unable to communicate with a different auction platform. The method further includes receiving a notification from an auction platform of the plurality of auction platforms in response to an auction event associated with the listing. The method also includes updating information for the listing on one or more different auction platforms of the plurality of auction platforms in response to receiving the notification.

[0005] In one embodiment, the notification from an auction platform comprises a bid for the listed item, the bid comprising a purchase amount for the item. In a further embodiment, the method includes selecting a bid of a plurality of bids received substantially at a same time from different auction platforms. The bid selected may be based on the time the notifications were received from the auction platforms. In various embodiments, the method includes sending a notification to each auction platform associated with each bid that is not selected that a bid was rejected.

[0006] In some embodiments, the method includes removing the listing for the item from an auction platform in response to receiving a bid for the item from a different auction platform and determining that the auction platform is a non-continuous bid action platform. In some embodiments, the method includes creating the listing for the item. The listing may include a description of the item, an initial bid price, an auction end time, a listing type and one or more selected auction platforms where the listing is posted.

[0007] In some embodiments, the method includes extending the auction end time by a predetermined time extension in response to receiving a bid within a predetermined time. In one embodiment, the end time for the auction is extendable up to a predetermined time period after the initial auction end time. In one embodiment, the method includes associating a plurality of iterations with the listing, the plurality of iterations specifying a number of times the listing is listable at an auction platform.

[0008] In a further embodiment, the method includes removing the listing from the plurality of auction platforms at the auction end time even if the listing has additional iterations at an auction platform. In some embodiments, the auction event comprises at least one of the listing expiring, the listing being removed, receiving a bid for the listing, and selling the listed item.

[0009] In some embodiments, notifications are sent and received using one or more different web services. In a further embodiment, notifications are formatted using one or more of extensible markup language ("XML") and JavaScript Object Notation ("JSON"). In certain embodiments, an auction platform pulls updated auction information from a web service.

[0010] An apparatus includes a processor and memory that stores code executable by the processor to post a listing for an item for sale to a plurality of auction platforms. Each of the plurality of auction platforms are incompatible with one another such that each auction platform is unable to communicate with a different auction platform. The executable code is further executable by the processor to receive a notification from an auction platform of the plurality of auction platforms in response to an auction event associated with the listing. The executable code is further executable by a processor to update information for the listing on one or more different auction platforms of the plurality of auction platforms in response to receiving the notification.

[0011] In one embodiment, the notification from an auction platform comprises a bid for the listed item, the bid comprising a purchase amount for the item. In a further embodiment, the code is further executable by the processor to select a bid of a plurality of bids received substantially at a same time from different auction platforms. The bid may be selected based on

the time the notifications were received from the auction platforms. In some embodiments, the code is further executable by the processor to send a notification to each auction platform associated with each bid that is not selected that a bid was rejected.

[0012] In various embodiments, the code is further executable by the processor to remove the listing for the item from an auction platform in response to receiving a bid for the item from a different auction platform and determine that the auction platform is a non-continuous bid action platform. In one embodiment, notifications are sent and received using one or more different web services, the notifications formatted using one or more of extensible markup language ("XML") and JavaScript Object Notation ("JSON").

[0013] A program product includes a computer readable storage medium that stores code executable by a processor. The executable code includes code to perform posting a listing for an item for sale to a plurality of auction platforms. Each of the plurality of auction platforms are incompatible with one another such that each auction platform is unable to communicate with a different auction platform. The executable code includes code to perform receiving a notification from an auction platform of the plurality of auction platforms in response to an auction event associated with the listing. The executable code includes code to perform updating information for the listing on one or more different auction platforms of the plurality of auction platforms in response to receiving the notification.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0014] In order that the advantages of the invention will be readily understood, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments that are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention, and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings, in which:

[0015] Figure 1 depicts a schematic block diagram of one embodiment of a system for a continuous bidding portal;

[0016] Figure 2 depicts a schematic block diagram of one embodiment of a module for a continuous bidding portal;

[0017] Figure 3 depicts a schematic block diagram of one embodiment of another module for a continuous bidding portal;

[0018] Figure 4 depicts a schematic flow-chart diagram of one embodiment of a method for a continuous bidding portal;

[0019] Figure 5A depicts a first portion of a schematic flow chart diagram of one embodiment of a method for a continuous bidding portal; and

[0020] Figure 5B depicts a second portion of a schematic flow chart diagram of one embodiment of a method for a continuous bidding portal.

## DETAILED DESCRIPTION

[0021] Reference throughout this specification to "one embodiment," "an embodiment," or similar language means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment. Thus, appearances of the phrases "in one embodiment," "in an embodiment," and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment, but mean "one or more but not all embodiments" unless expressly specified otherwise. The terms "including," "comprising," "having," and variations thereof mean "including but not limited to" unless expressly specified otherwise. An enumerated listing of items does not imply that any or all of the items are mutually exclusive and/or mutually inclusive, unless expressly specified otherwise. The terms "a," "an," and "the" also refer to "one or more" unless expressly specified otherwise.

[0022] Furthermore, the described features, advantages, and characteristics of the embodiments may be combined in any suitable manner. One skilled in the relevant art will recognize that the embodiments may be practiced without one or more of the specific features or advantages of a particular embodiment. In other instances, additional features and advantages may be recognized in certain embodiments that may not be present in all embodiments.

[0023] These features and advantages of the embodiments will become more fully apparent from the following description and appended claims, or may be learned by the practice of embodiments as set forth hereinafter. As will be appreciated by one skilled in the art, aspects of the present invention may be embodied as a system, method, and/or computer program product. Accordingly, aspects of the present invention may take the form of an entirely hardware embodiment, an entirely software embodiment (including firmware, resident software, micro-code, etc.) or an embodiment combining software and hardware aspects that may all generally be referred to herein as a "circuit," "module," or "system." Furthermore, aspects of the present invention may take the form of a computer program product embodied in one or more computer readable medium(s) having program code embodied thereon.

[0024] Many of the functional units described in this specification have been labeled as modules, in order to more particularly emphasize their implementation independence. For example, a module may be implemented as a hardware circuit comprising custom VLSI circuits or gate arrays, off-the-shelf semiconductors such as logic chips, transistors, or other discrete

components. A module may also be implemented in programmable hardware devices such as field programmable gate arrays, programmable array logic, programmable logic devices or the like.

[0025] Modules may also be implemented in software for execution by various types of processors. An identified module of program code may, for instance, comprise one or more physical or logical blocks of computer instructions which may, for instance, be organized as an object, procedure, or function. Nevertheless, the executables of an identified module need not be physically located together, but may comprise disparate instructions stored in different locations which, when joined logically together, comprise the module and achieve the stated purpose for the module.

[0026] Indeed, a module of program code may be a single instruction, or many instructions, and may even be distributed over several different code segments, among different programs, and across several memory devices. Similarly, operational data may be identified and illustrated herein within modules, and may be embodied in any suitable form and organized within any suitable type of data structure. The operational data may be collected as a single data set, or may be distributed over different locations including over different storage devices, and may exist, at least partially, merely as electronic signals on a system or network. Where a module or portions of a module are implemented in software, the program code may be stored and/or propagated on in one or more computer readable medium(s).

[0027] The computer readable medium may be a tangible computer readable storage medium storing the program code. The computer readable storage medium may be, for example, but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, holographic, micromechanical, or semiconductor system, apparatus, or device, or any suitable combination of the foregoing.

[0028] More specific examples of the computer readable storage medium may include but are not limited to a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), a portable compact disc read-only memory (CD-ROM), a digital versatile disc (DVD), an optical storage device, a magnetic storage device, a holographic storage medium, a micromechanical storage device, or any suitable combination of the foregoing. In the context of this document, a computer readable storage medium may be any tangible medium that can contain, and/or store program code for use by and/or in connection with an instruction execution system, apparatus, or device.

[0029] The computer readable medium may also be a computer readable signal medium. A computer readable signal medium may include a propagated data signal with program code embodied therein, for example, in baseband or as part of a carrier wave. Such a propagated signal may take any of a variety of forms, including, but not limited to, electrical, electro-magnetic, magnetic, optical, or any suitable combination thereof. A computer readable signal medium may be any computer readable medium that is not a computer readable storage medium and that can communicate, propagate, or transport program code for use by or in connection with an instruction execution system, apparatus, or device. Program code embodied on a computer readable signal medium may be transmitted using any appropriate medium, including but not limited to wire-line, optical fiber, Radio Frequency (RF), or the like, or any suitable combination of the foregoing.

[0030] In one embodiment, the computer readable medium may comprise a combination of one or more computer readable storage mediums and one or more computer readable signal mediums. For example, program code may be both propagated as an electro-magnetic signal through a fiber optic cable for execution by a processor and stored on RAM storage device for execution by the processor.

[0031] Program code for carrying out operations for aspects of the present invention may be written in any combination of one or more programming languages, including an object oriented programming language such as VB.net, C#, .NET, Java, Smalltalk, C++, PHP or the like and conventional procedural programming languages, such as the "C" programming language or similar programming languages. The program code may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider).

[0032] The computer program product may be shared, simultaneously serving multiple customers in a flexible, automated fashion. The computer program product may be standardized, requiring little customization and scalable, providing capacity on demand in a pay-as-you-go model. The computer program product may be stored on a shared file system accessible from one or more servers.

[0033] The computer program product may be integrated into a client, server and network environment by providing for the computer program product to coexist with

applications, operating systems and network operating systems software and then installing the computer program product on the clients and servers in the environment where the computer program product will function.

[0034] In one embodiment software is identified on the clients and servers including the network operating system where the computer program product will be deployed that are required by the computer program product or that work in conjunction with the computer program product. This includes the network operating system that is software that enhances a basic operating system by adding networking features.

[0035] Furthermore, the described features, structures, or characteristics of the embodiments may be combined in any suitable manner. In the following description, numerous specific details are provided, such as examples of programming, software modules, user selections, network transactions, database queries, database structures, hardware modules, hardware circuits, hardware chips, etc., to provide a thorough understanding of embodiments. One skilled in the relevant art will recognize, however, that embodiments may be practiced without one or more of the specific details, or with other methods, components, materials, and so forth. In other instances, well-known structures, materials, or operations are not shown or described in detail to avoid obscuring aspects of an embodiment.

[0036] Aspects of the embodiments are described below with reference to schematic flowchart diagrams and/or schematic block diagrams of methods, apparatuses, systems, and computer program products according to embodiments of the invention. It will be understood that each block of the schematic flowchart diagrams and/or schematic block diagrams, and combinations of blocks in the schematic flowchart diagrams and/or schematic block diagrams, can be implemented by program code. The program code may be provided to a processor of a general purpose computer, special purpose computer, sequencer, or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable data processing apparatus, create means for implementing the functions/acts specified in the schematic flowchart diagrams and/or schematic block diagrams block or blocks.

[0037] The program code may also be stored in a computer readable medium that can direct a computer, other programmable data processing apparatus, or other devices to function in a particular manner, such that the instructions stored in the computer readable medium produce an article of manufacture including instructions which implement the function/act specified in the schematic flowchart diagrams and/or schematic block diagrams block or blocks.

[0038] The program code may also be loaded onto a computer, other programmable data processing apparatus, or other devices to cause a series of operational steps to be performed on the computer, other programmable apparatus or other devices to produce a computer implemented process such that the program code which executed on the computer or other programmable apparatus provide processes for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks.

[0039] The schematic flowchart diagrams and/or schematic block diagrams in the Figures illustrate the architecture, functionality, and operation of possible implementations of apparatuses, systems, methods and computer program products according to various embodiments of the present invention. In this regard, each block in the schematic flowchart diagrams and/or schematic block diagrams may represent a module, segment, or portion of code, which comprises one or more executable instructions of the program code for implementing the specified logical function(s).

[0040] It should also be noted that, in some alternative implementations, the functions noted in the block may occur out of the order noted in the Figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. Other steps and methods may be conceived that are equivalent in function, logic, or effect to one or more blocks, or portions thereof, of the illustrated Figures.

[0041] Although various arrow types and line types may be employed in the flowchart and/or block diagrams, they are understood not to limit the scope of the corresponding embodiments. Indeed, some arrows or other connectors may be used to indicate only the logical flow of the depicted embodiment. For instance, an arrow may indicate a waiting or monitoring period of unspecified duration between enumerated steps of the depicted embodiment. It will also be noted that each block of the block diagrams and/or flowchart diagrams, and combinations of blocks in the block diagrams and/or flowchart diagrams, can be implemented by special purpose hardware-based systems that perform the specified functions or acts, or combinations of special purpose hardware and program code.

[0042] Figure 1 depicts a schematic block diagram of one embodiment of a system 100 for a continuous bidding portal. In one embodiment, the system 100 includes one or more auction management devices 102 such as servers, desktop computers, laptop computers, or the like. In certain embodiments where the computing auction management devices 102 are servers, the servers may include blade servers, virtual servers, cloud servers, remote servers, network servers, or the like. The auction management devices 102 may be grouped into one or more

physical groups, logical groups, functional groups, or the like. In some embodiments, the auction management devices 102 may be part of a data center and may be physically located in the same facility or in remote locations. Auction management devices 102, in certain embodiments, are configured to store, access, host, process, coordinate, synchronize, or the like, data associated with an online auction, as described below.

[0043] The system 100, in another embodiment, includes one or more computing devices 104a-n, such as servers, configured to be auction platforms. An auction platform 104a-n, as used herein, is a platform configured to host an online auction. An online auction may be an auction that is accessible via a network 108b, such as the Internet, an intranet, or the like. In one embodiment, the auction platforms 104a-n may present an interface, such as a web page, for users to post listings for items for sale, bid on items for sale, buy items for sale, view items for sale, or the like. In a traditional online auction, for example, a user may visit a web page where the auction is being hosted, view products that are for sale, and enter one or more bids on the products until a specified auction end time is reached. Generally, the user with the highest bid wins the auction and the opportunity to purchase the product for the bid price. In some embodiments, an auction platform 104a-n provides an option for a user to buy the item immediately (e.g., a "buy it now" option), without bidding on the item and waiting for the auction end time to be reached. The auction platforms 104a-n may be configured to host auctions for various products, such as vehicles, electronics, tools, clothes, furniture, or the like.

[0044] In certain embodiments, users visit auction platforms 104a-n using one or more information handling devices 106, such as desktop computers, laptop computers, tablet computers, smart phones, smart watches or other wearable devices, smart TVs, or the like that are communicatively coupled to the auction platforms 104a-n via a network 108b. For example, a user may visit a web site hosted by an auction platform 104a-n using an iPad® or other tablet computer. The user may use the interface provided by the auction platform 104a-n to view items for sale, bid on an item for sale, complete a purchase for an item, or the like.

[0045] In one embodiment, the information handling devices 106 are communicatively coupled to one or more auction platforms 104a-n via a first data network 108b. Similarly, the auction platforms 104a-n are communicatively coupled to the auction management devices 102 via a second data network 108a. In some embodiments, the first data network 108b is the same data network as the second data network 108a, such as the Internet. The data networks 108a, 108b, in one embodiment, comprise digital communication networks that transmit digital communications. The data networks 108a, 108b may include wireless networks, such as a wireless cellular networks, local wireless networks, such as Wi-Fi networks, Bluetooth®

networks, near-field communication (NFC) networks, ad hoc networks, and/or the like. The data networks 108a, 108b may include wide area networks (WANs), storage area networks (SANs), local area networks (LANs), optical fiber networks, the internet, or other digital communication networks. The data networks 108a, 108b may include two or more networks. The data networks 108a, 108b may include one or more servers, routers, switches, and/or other networking equipment. The data network 108a, 108b may also include computer readable storage media, such as a hard disk drive, an optical drive, non-volatile memory, random access memory (RAM), or the like.

[0046] In some embodiments, auction platforms 104a-n are independent entities that do not communicate with each other. Thus, in certain embodiments, if a user desires to post a listing for an item at each auction platform 104a-n, the user may be required to create a separate product listing for the item on each auction platform 104a-n, which may be cumbersome and time consuming to create, monitor, and maintain. For example, a user that is selling his car may be required to create separate listings for his car on auction platform A, auction platform B, and auction platform C in order to generate the most exposure for his listing. However, the user may have to monitor each auction platform 104a-n to determine whether other users are bidding on his car, whether his car has been sold under a "buy it now" option, or the like. Examples of different auction platforms 104a-n for vehicles may include SmartAuction, Manheim OVE, and Adesa-OpenLane.

[0047] Additionally, when the auction is finished, the user may be required to manually remove the listing from each auction platform 104a-n and/or re-post the listing for the car if the car did not sell. Furthermore, in various embodiments, when a bid for an item is received from a user on a particular auction platform 104a-n, listings for the item on different auction platforms 104a-n are removed such that the item may only be bid on and purchased by users of the auction platform 104a-n that entered the first bid.

[0048] The auction management devices 102, in certain embodiments, monitor, manage, coordinate, or the like, bidding activity among the different auction platforms 104a-n. In the example above, if a user were to bid on a car listing using auction platform A, instead of removing the car listing from other auction platforms 104a-n, the auction management devices 102 may update bid information for the listing on the other auction platforms 104a-n, such as the current bid price, which is an improvement upon existing online auction systems.

[0049] In one embodiment, an auction module 110, which at least a portion of may be located on the auction management devices 102, the auction platforms 104a-n, and/or the information handling devices 106, facilitates the monitoring, maintenance, management, or the

like of item listings on a plurality of auction platforms 104a-n. In one embodiment, the auction module 110 posts a listing for an item for sale at a plurality of auction platforms 104a-n. In a further embodiment, the auction module 110 receives a notification from an auction platform in response to an auction event associated with the item listing. The auction event may be a new bid, a "buy it now" sale, an expiration event, or the like. The auction module 110, in some embodiments, updates information for the listing on one or more different auction platforms 104a-n in response to receiving the notification. As described below with reference to Figure 2, the auction module 110 may utilize one or more different modules to perform the functions of the auction module 110.

[0050] In certain embodiments, the auction module 110 communicates with the various auction platforms 104a-n using web services or other mechanisms. As used herein, web services are methods of communication between two devices over a network 108a, 108b. Specifically, a web service is a software function provided at a network address where the web service is always on. Web services may integrate web-based applications using a modeling language (XML, JSON) to tag the data, a messaging protocol (SOAP or similar protocol) to transfer the data, a web service definition language (WSDL - typically XML-based) to describe the services that are available, and a registry (e.g., universal description, discovery, and integration (UDDI) – a platform-independent, XML-based registry) to where the web services can be listed.

[0051] In some embodiments, certain auction platforms 104a-n may not be compatible with certain web services utilized by the auction module 110. Some auction platforms 104a-n may choose not to participate in continuous bidding. In either of these embodiments, these auction platforms 104a-n are considered "non-continuous bidding" auction platforms 104a-n because the auction platforms 104a-n may not be able to send, receive, and/or process updates to/from the auction module 110 or may choose not to participate in the continuous bidding process. Accordingly, in certain embodiments, when a bid for an item is received from a different auction platform 104a-n, the listing is removed from each non-continuous bidding auction platform 104a-n because the non-continuous bidding auction platforms 104a-n are not capable of receiving and sending updated bid notifications to/from the action module 110 or have chosen not to participate in the continuous bidding process.

[0052] On the other hand, auction platforms 104a-n that are compatible with the web services utilized by the auction module 110 are considered "continuous bidding" auction platforms 104a-n because the auction platforms 104a-n are capable of sending, receiving, and processing updates to/from the auction module 110. Accordingly, in certain embodiments, when a bid for an item is received from a different auction platform 104a-n, the listing for the item on

the continuous bidding auction platforms 104a-n is updated to reflect the new bid price because the continuous bidding auction platforms 104a-n are capable of receiving and sending updated bid notifications to/from the action module 110.

[0053] Figure 2 depicts a schematic block diagram of one embodiment of a module 200 for a continuous bidding portal. In one embodiment, the module 200 includes an instance of an auction module 110. The auction module 110, in some embodiments, includes one or more of a posting module 202, a notification module 204, and an update module 206, which are described in more detail below.

[0054] The posting module 202, in one embodiment, is configured to post a listing for an item for sale on a plurality of auction platforms 104a-n. The listing, in certain embodiments, may include various information describing the item for sale including the initial bid price, a reserve price (the lowest price the seller is willing to accept), an auction end time, a "buy it now" price, a product description, images of the product, seller information, or the like. As described in more detail below, the create module 304 may facilitate the creation of an item listing. For example, a user may create a listing for a vehicle that includes an initial bid price of $10,000, a reserve price of $10,000, an end date set for one week from the time the listing is posted, the vehicle identification number ("VIN"), images of the vehicle, and a description of the vehicle.

[0055] The posting module 202, as described above, may communicate with the various auction platforms 104a-n via a data network 108a using a web service to send the item listing to the auction platforms 104a-n. In response to receiving the listing for the item, the auction platforms 104a-n may post the listing on their respective interfaces, e.g., websites, for users to view and bid on.

[0056] In one embodiment, the notification module 204 is configured to receive a notification from an auction platform 104a-n in response to an auction event associated with the item listing. The auction event, in some embodiments, includes a bid for a listed item, a "buy it now" purchase of the item, a question about the item, removal of the listing from an auction platform 104a-n, expiration of the listing of the item, or the like. The notification received by the notification module 204 may include the type of event and information associated with the event. For example, the notification module 204 may receive a bid notification, indicating that the listing received a bid from a user, and the amount of the bid, the new bid price, and/or the date/time of the bid.

[0057] In some embodiments, the notification module 204 receives notifications from auction platforms 104a-n synchronously or asynchronously in response to a message being sent to the auction platforms 104a-n. For example, in synchronous mode, certain messages sent to the

auction platforms 104a-n may require a response before proceeding, and, therefore a notification would need to be received by the notification module 204 before processing could continue. On the other hand, in asynchronous mode, some messages may not require a response before proceeding, and therefore a notification would not need to be received by the notification module 204 before processing could continue.

[0058] The update module 206, in one embodiment, is configured to update information for the listing on one or more different auction platforms 104a-n in response to receiving the auction event notification in real-time, meaning that the listing information for the item at an auction platform 104a-n is updated quickly such that the user is unaware that the auction platform 104a-n is communicating with the update module 206. For example, if the notification module 204 receives a bid notification, the update module 206 may push the information associated with the bid notification, such as the bid amount and the new bid price of the item, as well as the date/time of the bid, to the other auction platforms 104a-n that have a listing for the item so that the other action platforms 104a-n can update the bid information for the listing of the item. Similarly, if the notification module 204 receives a notification from an auction platform 104a-n that an item was purchased using a "buy it now" option, the update module 206 may send an update to the other auction platforms 104a-n that have a listing for the item that the item has sold so that they can deactivate, remove, delist, or the like, the listing for the item.

[0059] In certain embodiments, if the notification module 204 receives a bid notification from any auction platform 104a-n, the update module 206 sends an update to the non-continuous bidding auction platforms 104a-n to remove the listing of the item because the non-continuous bidding auction platforms 104a-n are not participating or cannot participate in a continuous bidding auction due, at least in part, to the non-continuous bidding auction platforms' incompatibility with the web services being used by the auction module 110. In some embodiments, if the notification module 204 receives a bid notification from a non-continuous bidding auction platform 104a-n, the update module 206 sends a notification to each non-continuous bidding auction platform 104a-n to remove the listing for the item except the auction platform 104a-n that received the bid because the auction platform 104a-n that received the bid is capable of receiving additional internal bids if and until a bid from a continuous bidding auction platform 104a-n is received.

[0060] In some embodiments, the update module 206 may provide data to the auction platforms 104a-n such that the auction platforms 104a-n may check and "pull" data for its listings. In one embodiment, the update module 206 may make accessible listing data, auction data, product data, seller data, or the like. The auction platforms 104a-n may send a request for

certain data, and the update module 204 may send the requested data, if available, using a web service.

[0061] In another embodiment, an auction platform 104a-n that receives a bid for a listing may use a web service to pull data for the listing to check whether the received bid is the highest bid. If the received bid for the listing is the highest bid received from all the auction platforms 104a-n where the listing is posted, the update module 206 will lock the bid as the highest bid. If the received bid is not the highest bid for the listing, the update module 206 may send a message, notification, etc., to the auction platform 104a-n that received the bid to indicate that a different bid is currently the highest bid, e.g., a higher bid may have been received from a different auction platform 104a-n before the current bid was received. In certain embodiments, it may be beneficial to pull data where there occurs an outage in the system 100, or in particular at the auction platforms 104a-n, so that the auction platforms 104a-n can re-sync item listings by pulling data provided by the update module 206 and/or confirm that a received bid is the high bid prior to accepting the bid.

[0062] Figure 3 depicts a schematic block diagram of one embodiment of another module 300 for a continuous bidding portal. In one embodiment, the module 300 includes an instance of an auction module 110. The auction module 110, in certain embodiments, includes one or more of a posting module 202, a notification module 204, and an update module 206, which may be substantially similar to the posting module 202, the notification module 204, and the update module 206 described above with reference to Figure 2. In a further embodiment, the auction module 110 includes one or more of a create module 302 and a conflict module 304, which are described below.

[0063] The create module 302, in one embodiment, is configured to create a listing for an item. The create module 302, in various embodiments, receives information from a user regarding the product that the user is selling and creates a listing for the product that can be displayed on various auction platforms 104a-n. For example, if a user is creating a listing for a vehicle, the create module 302 may receive a description of the vehicle, one or more images of the vehicle, the VIN for the vehicle, the initial bid price, a "buy it now" price, an auction end date/time, and/or the like. In certain embodiments, the create module 302 creates a listing using a modeling language, such as XML, which can be sent to the various auction platforms 104a-n by the posting module 202 using one or more web services.

[0064] In some embodiments, the auction end date/time is the same for each auction platform 104a-n to ensure that the length of the auction is consistent across all auction platforms 104a-n. In certain embodiments, the winning bidder is the bidder with the highest bid as of the

auction end time. In a further embodiment, the update module 206 may update the listing information, including the auction end date/time, at any point during the auction. In one embodiment, if the notification module 204 receives a bid notification within a predetermined time of the listing's end date/time, the update module 206 extends the auction end date/time by a period of time. For example, if a bid is received within five minutes of the specified auction end date/time, the update module 204 may extend the auction end date/time by five minutes to account for processing delays and provide users of other auction platforms 104a-n an opportunity to bid on the product. In various embodiments, the auction ends a predetermined time after the initial auction end date/time to ensure bidding does not continue indefinitely. For example, an auction may have a hard stop time of thirty minutes such that the auction can only be extended up to thirty minutes past the specified auction end date/time.

[0065] In some embodiments, the end date/time may be an absolute end date/time for a listing that has multiple iterations. As used herein, an iteration for a listing is the number of times, e.g., days, that a listing is posted on an auction platform 104a-n. For example, a vehicle listing may be posted to an auction platform 104a-n every day for seven days, as specified by the end date/time (assuming no bids are placed on the vehicle when it is posted). In some embodiments, the auction management devices 102 maintain, set, monitor, etc., the auction end date/time across multiple auction platforms 104a-n, and each auction platform 104a-n manages posting the listing for each iteration and performs its own end of sale processing if it is the auction platform 104a-n that received the winning bid.

[0066] In certain embodiments, after a listing is created by the create module 302, the posting module 202 posts the listing to a plurality of auction platforms 104a-n. In response to the listing being posted at the auction platforms 104a-n, the notification module 204 may receive a listing notification from each auction platform 104a-n to confirm that the listing was posted. In some embodiments, the auction may not have started at a given auction platform 104a-n if the notification module 204 did not receive a listing notification from the given auction platforms 104a-n selected to host the listing. In other embodiments, the auction will begin regardless of whether a listing notification is received from one or more auction platforms 104a-n.

[0067] In some embodiments, if the notification module 204 receives a listing notification from an auction platform 104a-n after a bid notification has been received from a different auction platform 104a-n, the update module 204 sends updated bid information, such as the current bid price, to the auction platform 104a-n that sent the listing notification. This ensures that the correct bid information is reflected in the listing as soon as it is posted.

[0068] In one embodiment, if the notification module 204 does not receive a listing notification within a period of time after the posting module 202 sent the listing information and/or a posting error notification is received from an auction platform 104a-n indicating that the listing was not posted correctly, the posting module 202 may re-post the listing to the auction platform 104a-n.

[0069] The conflict module 304, in one embodiment, is configured to select a bid of a plurality of bids received substantially at the same time from different auction platforms 104a-n. As used herein, bids received substantially at the same time may mean bid notifications that are received by the notification module 204 within a predetermined time period of one another, such as 100 milliseconds, 500 milliseconds, 1 second, or the like, or bids that are received at different auction platforms 104a-n within a predetermined time period of one another. Accordingly, bid notifications may include a timestamp indicating when a bid was entered at an auction platform 104a-n.

[0070] The conflict module 304, in one embodiment, selects a bid of a plurality of bids received substantially at the same time by determining which bid was received first, but still within the time period that the bids are considered to be received at the same time. Thus, the conflict module 304 may determine which bid was received first by determining which bid was entered first at the auction platform 104a-n or which bid notification the notification module 204 received first.

[0071] Figure 4 depicts a schematic flow-chart diagram of one embodiment of a method 400 for a continuous bidding portal. In one embodiment, the method 400 begins and posts 402 a listing for an item for sale to a plurality of auction platforms 104a-n. In some embodiments, the posting module 202 posts 402 the listing for the item to a plurality of auction platforms 104a-n.

[0072] In a further embodiment, the method 400 receives 404 a notification from an auction platform 104a-n in response to an auction event associated with the item listing. An auction event may include a bid for an item, a purchase of an item (e.g., through a "buy it now" option), a removal of the listing from the auction platform 104a-n, or the like. In one embodiment, the notification module 204 receives 404 the notification of an auction event associated with the listing.

[0073] In one embodiment, the method 400 updates 406 information for the listing on one or more different auction platforms 104a-n in response to receiving the notification. An update may include updating a bid price for an item on auction platforms 104a-n where the item is listed in response to the method 400 receiving a bid notification from a different auction platform 104a-n. Another update may include sending a message that the item has been

purchased under a "buy it now" option in response to the method 400 receiving a "buy it now" notification indicating so that the listing can be removed from the auction platforms 104a-n. In one embodiment, the update module 206 updates 406 information for the listing on the auction platforms in response to receiving the notification, and the method 400 ends.

[0074] Figures 5A and 5B depict a first portion and a second portion, respectively, of a schematic flow chart diagram of one embodiment of a method 500 for a continuous bidding portal. In one embodiment, starting at Figure 5A, the method 500 begins and creates 502 a listing for an item. In certain embodiments, the method 500 creates 502 the listing for the item based on input received from a user, such as an item description, one or more images of the item, a starting bid price for the item, a "buy it now" price for the item, information associated with the seller of the item, and/or the like. In some embodiments, the create module 302 creates 502 a listing for an item.

[0075] In a further embodiment, the method 500 posts 504 the item listing on one or more auction platforms 104a-n. The method 500, in one embodiment, determines 506 if the auction is completed, which may be based on whether the product has sold, the end date/time of the auction has been reached, the end date/time of an iteration of the auction has been reached, or the like. If the method 500 determines 506 that the auction is not finished, the method 500 determines 508 if bid information has been received. If the method 500 determines 508 that bid information has not been received, the method 500 continues to monitor 508 for bid notifications while the auction is still live.

[0076] If the method 500, in one embodiment, determines 508 that a bid notification was received, the method 500 further determines 510 whether the bid notification was received from a continuous bid or non-continuous bid auction platform 104a-n. If the method 500, in another embodiment, determines 510 that the bid notification was received from a continuous bid auction platform 104a-n, the method removes 512 the item listing from the non-continuous bid auction platforms 104a-n. For example, the method 500 may send a message to the non-continuous bid auction platforms 104a-n indicating that a bid for the item has been received and that the item should be removed from the non-continuous bid auction platform's 104a-n listings.

[0077] If the method 500, in certain embodiments, determines 510 that the bid was not received from a continuous bid auction platform 104a-n, and therefore was received from a non-continuous bid auction platform 104a-n, the method 500 removes 514 the listing from other non-continuous bid auction platforms 104a-n that did not receive the bid. In a further embodiment, regardless of whether the bid notification was received 512, 514 from a continuous bid or non-

continuous bid auction platform 104a-n, the method 500 resolves 516 any bid conflicts if two or more bids are received at substantially the same time.

[0078] In certain embodiments, as described above, the method 500 resolves 516 bid conflicts by selecting the bid that was received first based on when the bid notification was received from the auction platforms 104a-n. In certain embodiments, the conflict module 304 resolves 516 bids that are received at substantially the same time.

[0079] In one embodiment, the method 500 updates 518 the item listing on one or more auction platforms 104a-n where the listing is still active. The method 500, for example, may send the time/date of the received bid, the amount of the bid, the new bid price, or the like to the other auction platforms 104a-n, using one or more web services, so that the auction platforms 104a-n can update the information for the item listing.

[0080] If the method 500 determines 506 that the auction is finished, the method 500 follows "A" to Figure 5B and determines 520 whether any bids were received for the item. If the method 500 determines 520 that bids were placed on the item, the method 500 removes 522 the item listings from each auction platform 104a-n where the item is listed, and completes 524 the sale of the item at the auction platform 104a-n where the winning bid was received. Then the method 500 ends.

[0081] On the other hand, if the method 500 determines 520 that no bids were received for the item, the method 500 determines 526 whether the listing still has iterations remaining. As explained above, iterations may refer to the number of times the same product and/or listing for a product may be presented at the auction platforms 104a-n. For example, a vehicle listing may have seven iterations, meaning that the vehicle listing may be listed at an auction platform each day for seven days up until the auction end/date time. Thus, if the method 500 determines 526 that the item listing does have iterations remaining, the method 500 follows "B" to Figure 5A and determines 508 whether any bids have been received for the listing on the auction platforms 104a-n that reposted the listing for the new iteration. Otherwise, if the method 500 determines 526 that the listing does not have any remaining iterations available, the listing will not be reposted, and the method 500 removes 528 the item listings from each auction platform 104a-n where the item is listed. Then the method 500 ends.

[0082] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

CLAIMS

1. A method comprising:

posting a listing for an item for sale to a plurality of auction platforms, each of the plurality of auction platforms incompatible with one another such that each auction platform is unable to communicate with a different auction platform;

receiving a notification from an auction platform of the plurality of auction platforms in response to an auction event associated with the listing; and

updating information for the listing on one or more different auction platforms of the plurality of auction platforms in response to receiving the notification.

2. The method of claim 1, wherein the notification from an auction platform comprises a bid for the listed item, the bid comprising a purchase amount for the item.

3. The method of claim 2, further comprising selecting a bid of a plurality of bids received substantially at a same time from different auction platforms, the bid selected based on the time the notifications were received from the auction platforms.

4. The method of claim 3, further comprising sending a notification to each auction platform associated with each bid that is not selected that a bid was rejected.

5. The method of claim 1, further comprising removing the listing for the item from an auction platform in response to receiving a bid for the item from a different auction platform and determining that the auction platform is a non-continuous bid action platform.

6. The method of claim 1, further comprising creating the listing for the item, the listing comprising a description of the item, an initial bid price, an auction end time, a listing type and one or more selected auction platforms where the listing is posted.

7. The method of claim 6, further comprising extending the auction end time by a predetermined time extension in response to receiving a bid within a predetermined time.

8. The method of claim 7, wherein the end time for the auction is extendable up to a predetermined time period after the initial auction end time.

9. The method of claim 6, further comprising associating a plurality of iterations with the listing, the plurality of iterations specifying a number of times the listing is listable at an auction platform.

10. The method of claim 9, further comprising removing the listing from the plurality of auction platforms at the auction end time even if the listing has additional iterations at an auction platform.

11. The method of claim 1, wherein the auction event comprises at least one of the listing expiring, the listing being removed, receiving a bid for the listing, and selling the listed item.

12. The method of claim 1, wherein notifications are sent and received using one or more different web services.

13. The method of claim 12, wherein notifications are formatted using one or more of extensible markup language ("XML") and JavaScript Object Notation ("JSON").

14. The method of claim 1, wherein an auction platform pulls updated auction information from a web service.

15. An apparatus comprising:

a processor;

a memory that stores code executable by the processor to:

post a listing for an item for sale to a plurality of auction platforms, each of the plurality of auction platforms incompatible with one another such that each auction platform is unable to communicate with a different auction platform;

receive a notification from an auction platform of the plurality of auction platforms in response to an auction event associated with the listing; and

update information for the listing on one or more different auction platforms of the plurality of auction platforms in response to receiving the notification.

16. The apparatus of claim 15, wherein the notification from an auction platform comprises a bid for the listed item, the bid comprising a purchase amount for the item.

17. The apparatus of claim 16, wherein the code is further executable by the processor to:

select a bid of a plurality of bids received substantially at a same time from different auction platforms, the bid selected based on the time the notifications were received from the auction platforms; and

send a notification to each auction platform associated with each bid that is not selected that a bid was rejected.

18. The apparatus of claim 15, wherein the code is further executable by the processor to remove the listing for the item from an auction platform in response to receiving a bid for the item from a different auction platform and determine that the auction platform is a non-continuous bid action platform.

19. The apparatus of claim 15, wherein notifications are sent and received using one or more different web services, the notifications formatted using one or more of extensible markup language ("XML") and JavaScript Object Notation ("JSON").

20. A program product comprising a computer readable storage medium that stores code executable by a processor, the executable code comprising code to perform:

posting a listing for an item for sale to a plurality of auction platforms, each of the plurality of auction platforms incompatible with one another such that each auction platform is unable to communicate with a different auction platform;

receiving a notification from an auction platform of the plurality of auction platforms in response to an auction event associated with the listing; and

updating information for the listing on one or more different auction platforms of the plurality of auction platforms in response to receiving the notification.

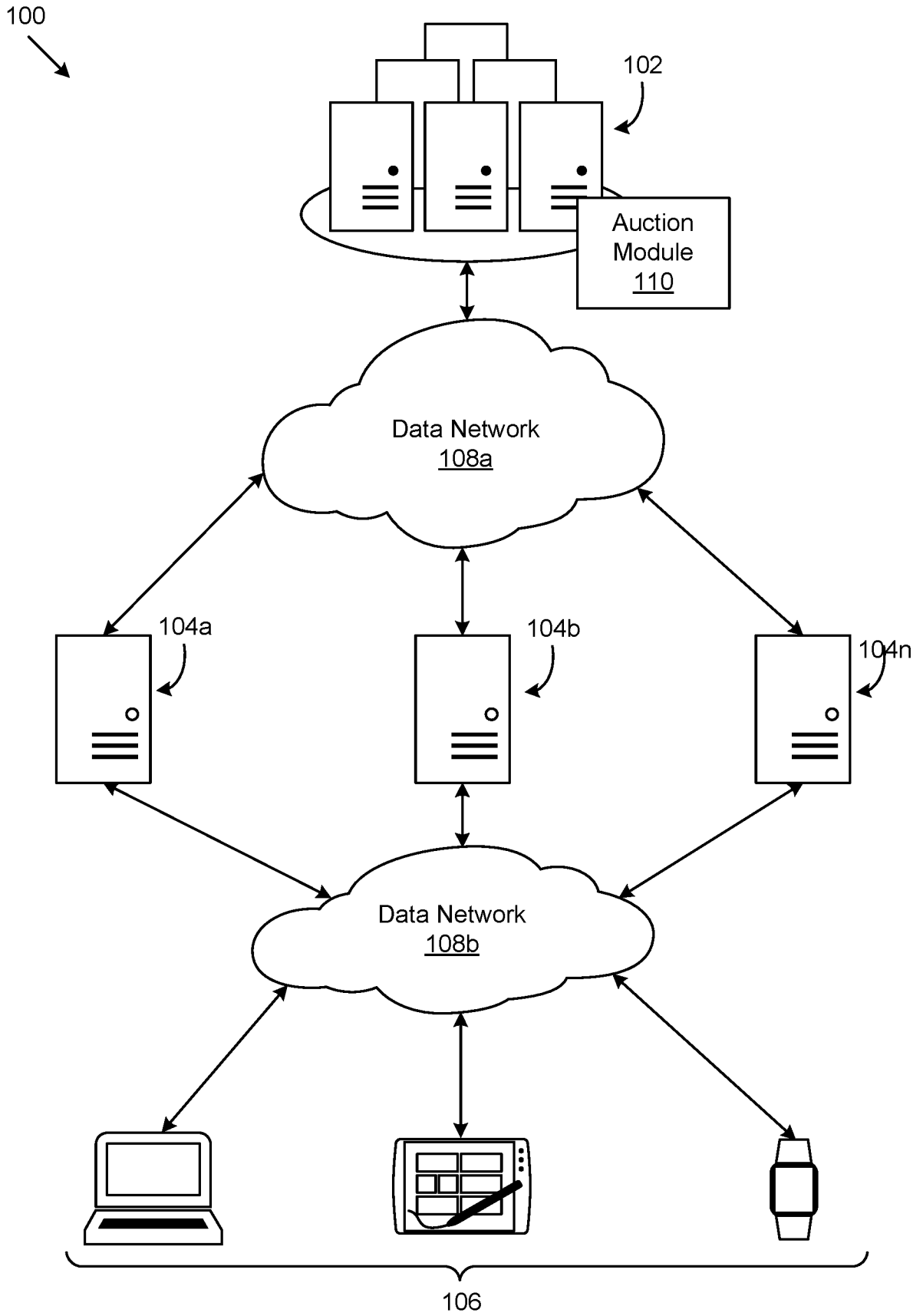
100
102
Auction Module 110
Data Network 108a
104a
104b
104n
Data Network 108b
106

FIG. 1

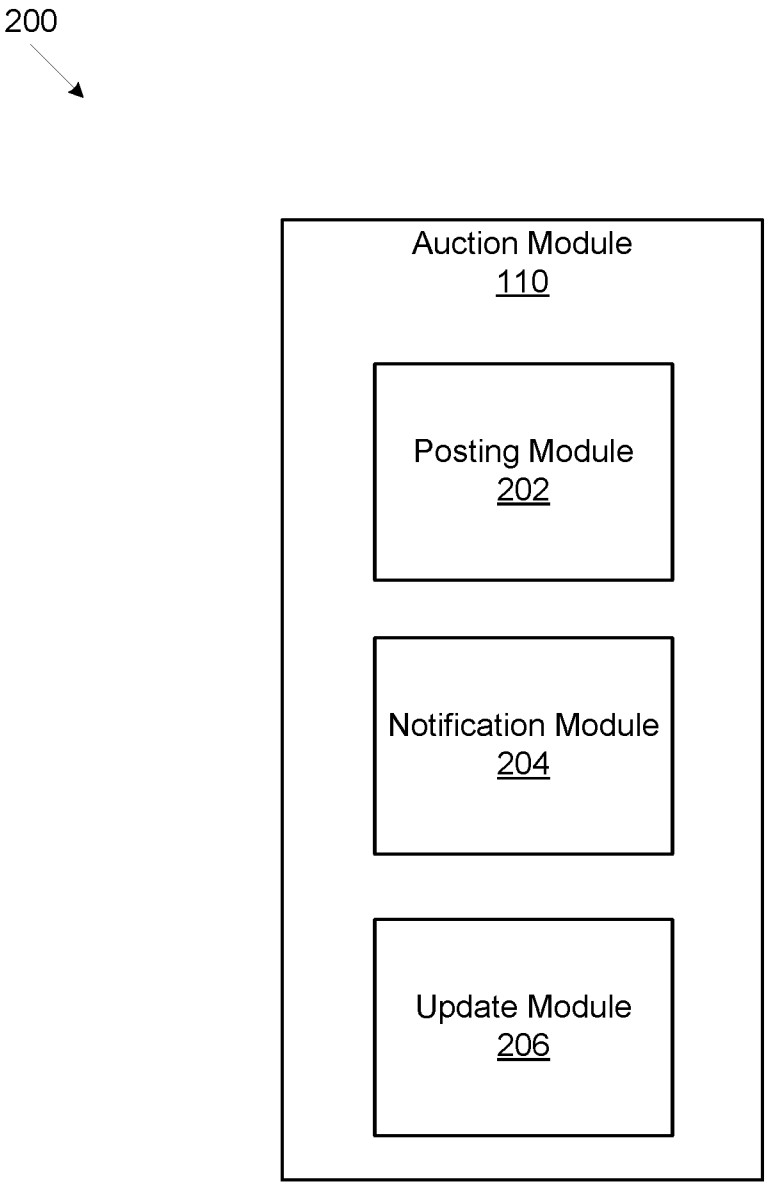
200
Auction Module
110
Posting Module
202
Notification Module
204
Update Module
206

FIG. 2

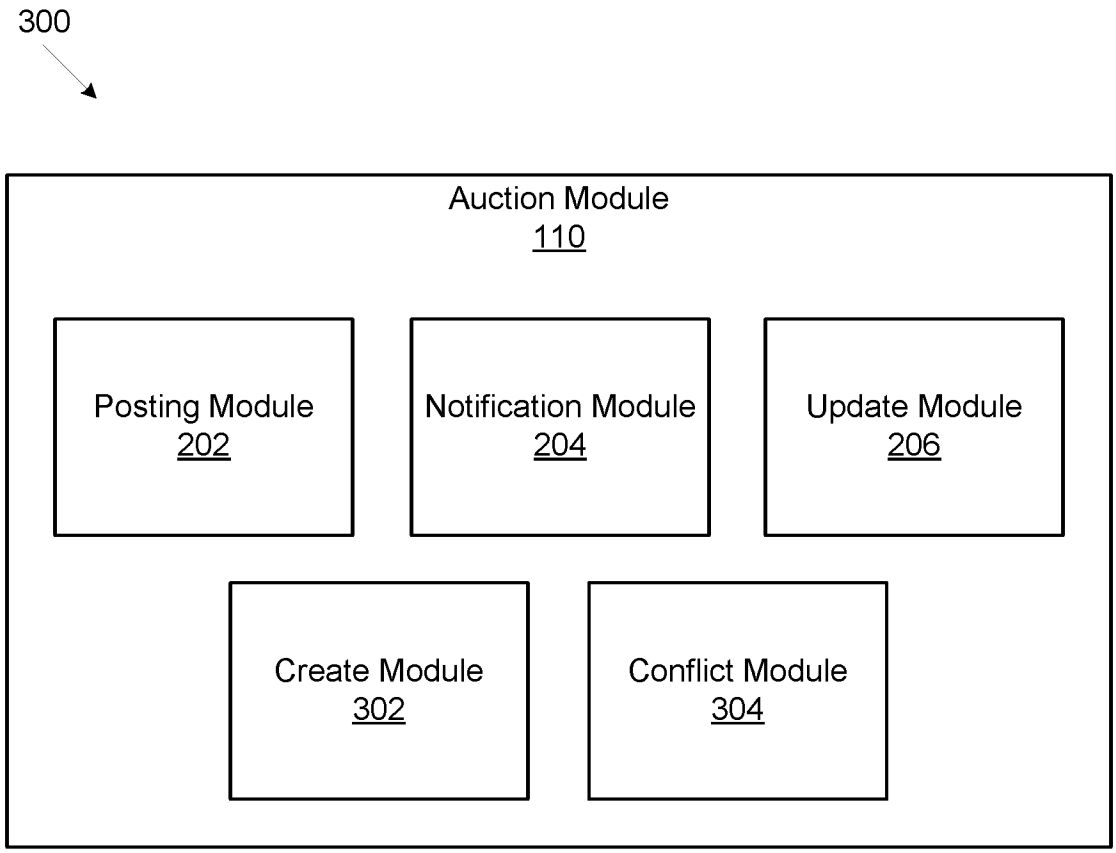
300
Auction Module
110
Posting Module
202
Notification Module
204
Update Module
206
Create Module
302
Conflict Module
304

FIG. 3

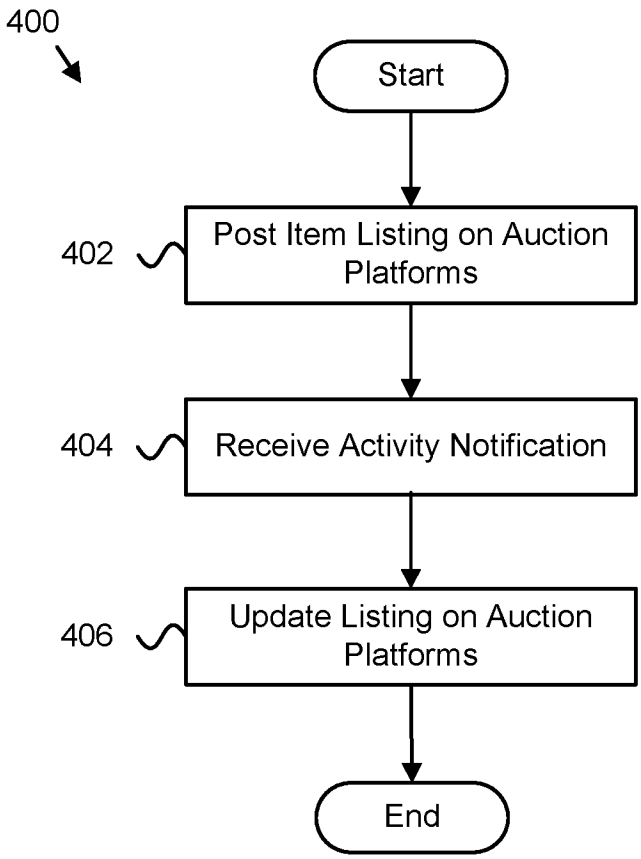
400
Start
402
Post Item Listing on Auction Platforms
404
Receive Activity Notification
406
Update Listing on Auction Platforms
End

FIG. 4

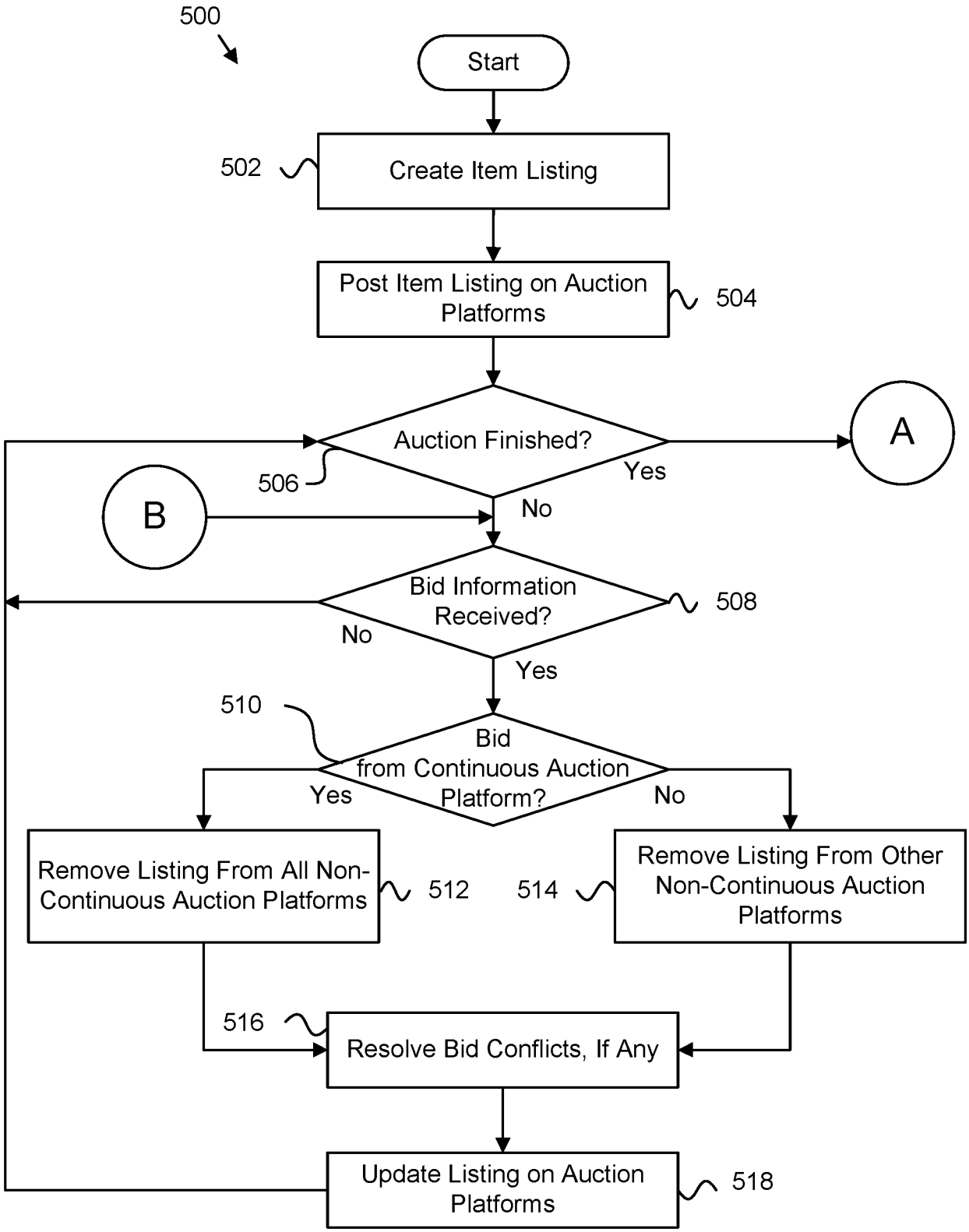
500
Start
502
Create Item Listing
Post Item Listing on Auction Platforms
504
Auction Finished?
506
Yes
A
B
No
Bid Information Received?
508
No
Yes
510
Bid from Continuous Auction Platform?
Yes
No
Remove Listing From All Non-Continuous Auction Platforms
512
514
Remove Listing From Other Non-Continuous Auction Platforms
516
Resolve Bid Conflicts, If Any
Update Listing on Auction Platforms
518

FIG. 5A

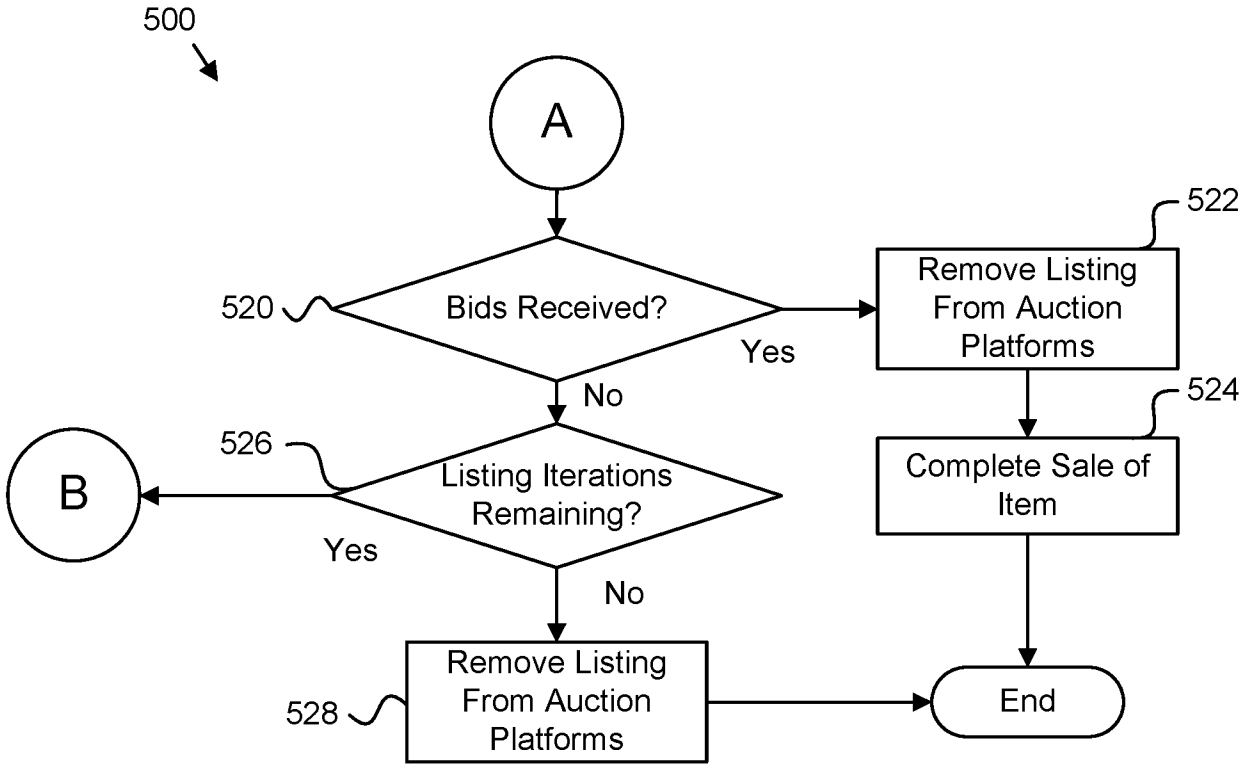
500
A
520
Bids Received?
Yes
No
522
Remove Listing From Auction Platforms
524
Complete Sale of Item
526
Listing Iterations Remaining?
Yes
No
B
528
Remove Listing From Auction Platforms
End

FIG. 5B

**INTERNATIONAL SEARCH REPORT**

International application No.
**PCT/US2016/049301**

**A. CLASSIFICATION OF SUBJECT MATTER**

**G06Q 30/08(2012.01)i, G06Q 30/06(2012.01)i, G06Q 50/10(2012.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)
G06Q 30/08; G06F 17/60; G06Q 30/00; G06Q 40/00; G06Q 50/00; G06Q 30/06; G06Q 50/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: auction, incompatible, platform, aggregate, integrate, bid, update

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 2002-0029185 A1 (TERUO TANAKA et al.) 07 March 2002<br>See paragraphs [0031]-[0039], claims 1-10 and figures 1-7. | 1,5-6,9-12,14-15,18,20 |
| Y | | 2-4,7-8,13,16-17,19 |
| Y | US 2008-0021811 A1 (MICHAEL BRADER-ARAJE et al.) 24 January 2008<br>See paragraphs [0030],[0036], claim 20 and figures 1-4. | 2-4,13,16-17,19 |
| Y | US 7734505 B2 (KEVIN MILLER et al.) 08 June 2010<br>See abstract, claim 1 and figure 3. | 7-8 |
| A | US 2007-0214075 A1 (GERALD H. ABLAN) 13 September 2007<br>See abstract, claim 1 and figure 1. | 1-20 |
| A | JP 2010-044778 A (DNA K.K.) 25 February 2010<br>See abstract, claim 1 and figure 1. | 1-20 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 05 December 2016 (05.12.2016) | **05 December 2016 (05.12.2016)** |


Name and mailing address of the ISA/KR
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Korean Intellectual Property Office
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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.
**PCT/US2016/049301**

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 2002-0029185 A1 | 07/03/2002 | JP 2002-083166 A<br>JP 3914696 B2 | 22/03/2002<br>16/05/2007 |
| US 2008-0021811 A1 | 24/01/2008 | US 7289967 B1<br>US 7904343 B2 | 30/10/2007<br>08/03/2011 |
| US 7734505 B2 | 08/06/2010 | US 2009-0112726 A1 | 30/04/2009 |
| US 2007-0214075 A1 | 13/09/2007 | None | |
| JP 2010-044778 A | 25/02/2010 | JP 4898883 B2 | 21/03/2012 |