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(54) Title: METHOD FOR GENERATING MEDIA COLLECTIONS

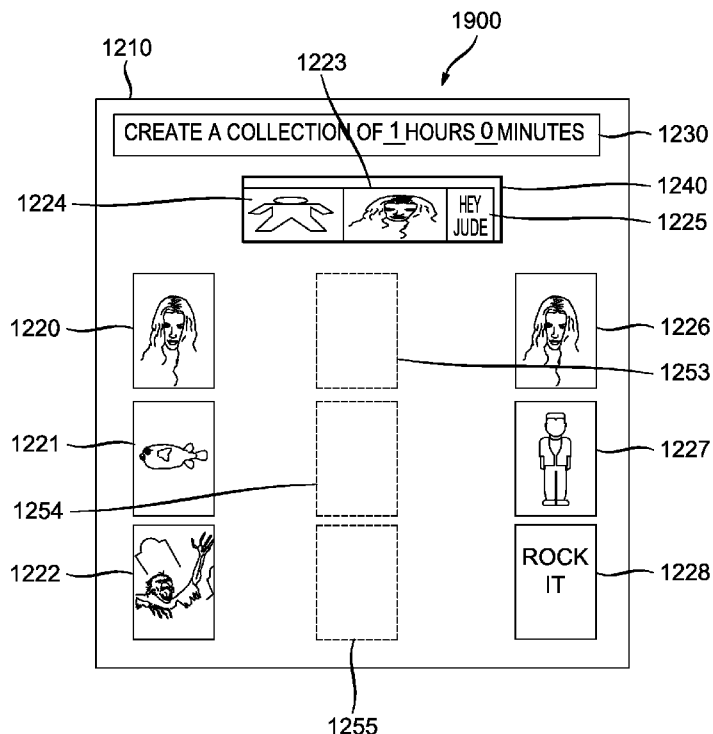


FIG. 19

(57) Abstract: A user interface is used for selecting a time duration for a media collection shelf. The media shelf can be populated with graphical elements corresponding to selected media assets, where the cumulative time duration of selected media assets should not exceed the time duration of the media collection shelf. When placed within the media collection shelf, a graphical element corresponding to a media asset is scaled in proportion to the time duration of the media asset as compared to the time duration of the media collection shelf. Optionally, selected media assets within the media collection shelf are played back in a particular order specified by a user.



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METHOD FOR GENERATING MEDIA COLLECTIONS

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application Serial No. 61/426,509 filed December 22, 2010 and U.S. Provisional Application Serial No. 61/429,741 filed on January 4, 2011, which are incorporated by reference herein in their entirety.

TECHNICAL FIELD

The present disclosure generally related to a user interface is used for displaying media collections. More particularly, the present disclosure relates to a method for generating media collections which graphically correspond to the time of the media assets within such media collections.

BACKGROUND OF THE INVENTION

When using a media device such as a media player or a tablet, it is likely that a user will have a variety of media assets (such as video, audio, pictures, and the like) that they will want to organize and playback. A user can, for example, use a playlist which provides a listing of media assets and a play order for the playback of such media assets. A playlist however can be cumbersome to use because most playlists exist in the form of text and they do not provide a user an easy way to determine how selected media assets correlate to other media assets.

SUMMARY OF THE INVENTION

A method and apparatus is presented where media assets are organized graphically in the form of media collection shelves. Such shelves can be used to specify a total amount of time a user wants media assets to be played and the play order of media assets. Selected media assets are modified when placed within a media collection shelf to reflect the amount of time the media asset will occupy in relation to the total amount of time designated for a media collection shelf.

BRIEF DESCRIPTION OF THE DRAWINGS

These, and other aspects, features and advantages of the present disclosure will be described or become apparent from the following detailed description of the preferred
5 embodiments, which is to be read in connection with the accompanying drawings.

In the drawings, wherein like reference numerals denote similar elements throughout the views:

10 FIG. 1 is a block diagram of an exemplary system for delivering video content in accordance with the present disclosure;

FIG. 2 is a block diagram of an exemplary set-top box/digital video recorder (DVR) in accordance with the present disclosure;

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FIG. 3 is a perspective view of an exemplary media device in accordance with an embodiment of the present disclosure;

FIG. 4 illustrates an exemplary embodiment of the use of a gesture for a sensing
20 controller or touch screen in accordance with the present disclosure;

FIG. 5 illustrates an exemplary embodiment of a user interface showing a collection of media assets in accordance with the present disclosure;

25 FIG. 6 illustrates an exemplary embodiment of a user interface showing a collection of media assets with a menu in accordance with the present disclosure;

FIG. 7 illustrates an exemplary embodiment of a user interface showing a collection of media assets in accordance with the present disclosure;

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FIG. 8 illustrates an exemplary embodiment of a user interface showing a collection of media assets in accordance with the present disclosure;

FIG. 9 illustrates an exemplary embodiment of a user interface showing a collection of media assets in accordance with the present disclosure;

FIG. 10 illustrates an exemplary embodiment of a user interface showing a number of media collections in the form of shelves in accordance with the present disclosure;

FIG. 11 illustrates an exemplary embodiment of a user interface used for populating a media collection with media assets in accordance with the present disclosure;

FIG. 12 illustrates an exemplary embodiment of user interface displaying media assets in accordance with the present disclosure;

FIG. 13 illustrates an exemplary embodiment of a user interface that specifies a time length for a media collection shelf in accordance with the present disclosure;

FIG. 14 illustrates an exemplary embodiment of a user interface that displays a media collection shelf generated in view of a user instruction in accordance with the present disclosure;

FIG. 15 illustrates an exemplary embodiment of a user interface that displays a media collection shelf generated in view of a user instruction in accordance with the present disclosure;

FIG. 16 illustrates an exemplary embodiment of a user interface that displays various examples of media collection shelves in accordance with the present disclosure;

FIG. 17 illustrates an exemplary embodiment of a user interface of a media collection shelf and a selected media asset in accordance with the present disclosure;

FIG. 18 illustrates an exemplary embodiment of a user interface with a media collection shelf and a graphic representing a media asset that is scaled in proportion to the length of time the media asset represents in accordance with the present disclosure;

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FIG. 19 illustrates an exemplary embodiment of a user interface with a media collection shelf and graphics representing media assets that are scaled in proportion to the length of time the media assets represent in accordance with the present disclosure;

FIG. 20 illustrates an exemplary embodiment of a user interface with a media collection shelf and graphics representing media assets that are scaled in proportion to the length of time the media assets represent in accordance with the present disclosure;

FIG. 21 illustrates an exemplary embodiment of a user interface indicating an error message when a media asset exceeds the length of time afforded to a media collection shelf in accordance with the present disclosure;

FIG. 22 illustrates an exemplary embodiment of a user interface with a media collection shelf and graphics representing media assets that are scaled in portion to the length of time the media assets represent in accordance with the present disclosure;

FIG. 23 illustrates an exemplary embodiment of a user interface with an option to indicate the media assets that would fill the remaining time left for a media collection shelf in accordance with the present disclosure;

FIG. 24 illustrates an exemplary embodiment of a user interface indicating the media assets that would fill the remaining time left for a media collection shelf in accordance with the present disclosure;

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FIG. 25 illustrates an exemplary embodiment of a user interface indicating the associated critic ratings associated with media assets in accordance with the present disclosure; and

10 FIG. 26 presents a flow chart for populating a media collection shelf with graphical representations of media assets in accordance with the present disclosure.

DETAILED DESCRIPTION

The present disclosure provides several different embodiments of a user interface
15 that is used for receiving, recording, playing back, purchasing, and the like media such as videos, television shows, movies, audio, music, video games, and the like. Such a user interface can be implemented on devices such as a computer, set top box, media server, tablet, mobile phone, personal media, device, portable video game system, video game system, and so forth.

20 The present disclosure provides several different embodiments of a user interface that is used for receiving, recording, playing back, purchasing, and the like media such as videos, television shows, movies, audio, music, video games, and the like. Such a system can be implemented on devices such as a computer, set top box, media server, tablet, mobile phone, personal media, device, portable video game system, video game system,
25 and so forth.

Turning now to FIG. 1, a block diagram of an embodiment of a system 100 for delivering content to a home or end user is shown. The content originates from a content source 102, such as a movie studio or production house. The content may be supplied in at least one of two forms. One form may be a broadcast form of content. The broadcast
30 content is provided to the broadcast affiliate manager 104, which is typically a national

broadcast service, such as the American Broadcasting Company (ABC), National Broadcasting Company (NBC), Columbia Broadcasting System (CBS), etc. The broadcast affiliate manager may collect and store the content, and may schedule delivery of the content over a deliver network, shown as delivery network 1 (106). Delivery network 1 (106) may include satellite link transmission from a national center to one or more regional or local centers. Delivery network 1 (106) may also include local content delivery using local delivery systems such as over the air broadcast, satellite broadcast, or cable broadcast. The locally delivered content is provided to a media device 108 in a user's home, where the content will subsequently be searched by the user. It is to be appreciated that the media device 108 can take many forms and may be embodied as a set top box/digital video recorder (DVR), a gateway, a modem, etc. Further, the media device 108 may act as entry point, or gateway, for a home network system that includes additional devices configured as either client or peer devices in the home network.

A second form of content is referred to as special content. Special content may include content delivered as premium viewing, pay-per-view, or other content otherwise not provided to the broadcast affiliate manager, e.g., movies, video games or other video elements. In many cases, the special content may be content requested by the user. The special content may be delivered to a content manager 110. The content manager 110 may be a service provider, such as an Internet website, affiliated, for instance, with a content provider, broadcast service, or delivery network service. The content manager 110 may also incorporate Internet content into the delivery system. The content manager 110 may deliver the content to the user's media device 108 over a separate delivery network, delivery network 2 (112). Delivery network 2 (112) may include high-speed broadband Internet type communications systems. It is important to note that the content from the broadcast affiliate manager 104 may also be delivered using all or parts of delivery network 2 (112) and content from the content manager 110 may be delivered using all or parts of delivery network 1 (106). In addition, the user may also obtain content directly from the Internet via delivery network 2 (112) without necessarily having the content managed by the content manager 110.

Several adaptations for utilizing the separately delivered content may be possible. In one possible approach, the special content is provided as an augmentation to the

broadcast content, providing alternative displays, purchase and merchandising options, enhancement material, etc. In another embodiment, the special content may completely replace some programming content provided as broadcast content. Finally, the special content may be completely separate from the broadcast content, and may simply be a media alternative that the user may choose to utilize. For instance, the special content may be a library of movies that are not yet available as broadcast content.

The media device 108 may receive different types of content from one or both of delivery network 1 and delivery network 2. The media device 108 processes the content, and provides a separation of the content based on user preferences and commands. The media device 108 may also include a storage device, such as a hard drive or optical disk drive, for recording and playing back audio and video content. Further details of the operation of the media device 108 and features associated with playing back stored content will be described below in relation to FIG. 2. The processed content is provided to a display device 114. The display device 114 may be a conventional 2-D type display or may alternatively be an advanced 3-D display.

The media device 108 may also be interfaced to a second screen such as a touch screen control device 116. The touch screen control device 116 may be adapted to provide user control for the media device 108 and/or the display device 114. The touch screen device 116 may also be capable of displaying video content. The video content may be graphics entries, such as user interface entries, or may be a portion of the video content that is delivered to the display device 114. The touch screen control device 116 may interface to media device 108 using any well known signal transmission system, such as infra-red (IR) or radio frequency (RF) communications and may include standard protocols such as infra-red data association (IRDA) standard, Wi-Fi, Bluetooth and the like, or any other proprietary protocols. Operations of touch screen control device 116 will be described in further detail below.

Optionally, media device 108 and touch screen control device 116 can be integrated into the same device. Examples of these media devices with a touch screen include computers, laptops, cell phones, personal media player, MP3 players, personal desk assistants, tablet devices, digital video recorders, and the like. For purposes of the

this specification, the term media device 108 can encompass all of these type of devices with set top boxes, digital video recorders, gateway devices, and the like.

In the example of Figure 1, the system 100 also includes a back end server 118 and a usage database 120. The back end server 118 includes a personalization engine that
5 analyzes the usage habits of a user and makes recommendations based on those usage habits. The usage database 120 is where the usage habits for a user are monitored and information about such usage habits is stored. It is possible to use such user habit information to develop a profile for a user which is then used for recommending advertisements and programming. In some cases, the usage database 120 may be part of
10 the back end server 118. In the present example, the back end server 118 (as well as the usage database 120) is connected to the system the system 100 and accessed through the delivery network 2 (112).

Turning now to FIG. 2, a block diagram of an embodiment of a media device 200 is shown. Receiving device 200 may operate similar to the media device described in
15 FIG. 1 and may be included as part of a gateway device, modem, set-top box, or other similar communications device. The device 200 shown may also be incorporated into other systems including an audio device or a display device. In either case, several components necessary for complete operation of the system are not shown in the interest of conciseness, as they are well known to those skilled in the art.

20 In the device 200 shown in FIG. 2, the content is received by an input signal receiver 202. The input signal receiver 202 may be one of several known receiver circuits used for receiving, demodulation, and decoding signals provided over one of the several possible networks including over the air, cable, satellite, Ethernet, fiber and phone line networks. The desired input signal may be selected and retrieved by the input signal
25 receiver 202 based on user input provided through a control interface or touch panel interface 222. Touch panel interface 222 may include an interface for a touch screen device. Touch panel interface 222 may also be adapted to interface to a cellular phone, a tablet, a mouse, a high end remote or the like.

The decoded output signal is provided to an input stream processor 204. The input stream processor 204 performs the final signal selection and processing, and includes separation of video content from audio content for the content stream. The audio content is provided to an audio processor 206 for conversion from the received format, such as compressed digital signal, to an analog waveform signal. The analog waveform signal is provided to an audio interface 208 and further to the display device or audio amplifier. Alternatively, the audio interface 208 may provide a digital signal to an audio output device or display device using a High-Definition Multimedia Interface (HDMI) cable or alternate audio interface such as via a Sony/Philips Digital Interconnect Format (SPDIF). The audio interface may also include amplifiers for driving one more sets of speakers. The audio processor 206 also performs any necessary conversion for the storage of the audio signals.

The video output from the input stream processor 204 is provided to a video processor 210. The video signal may be one of several formats. The video processor 210 provides, as necessary a conversion of the video content, based on the input signal format. The video processor 210 also performs any necessary conversion for the storage of the video signals.

A storage device 212 stores audio and video content received at the input. The storage device 212 allows later retrieval and playback of the content under the control of a controller 214 and also based on commands, e.g., navigation instructions such as fast-forward (FF) and rewind (Rew), received from a user interface 216 and/or touch panel interface 222. The storage device 212 may be a hard disk drive, one or more large capacity integrated electronic memories, such as static RAM (SRAM), or dynamic RAM (DRAM), or may be an interchangeable optical disk storage system such as a compact disk (CD) drive or digital video disk (DVD) drive.

The converted video signal, from the video processor 210, either originating from the input or from the storage device 212, is provided to the display interface 218. The display interface 218 further provides the display signal to a display device of the type described above. The display interface 218 may be an analog signal interface such as red-green-blue (RGB) or may be a digital interface such as HDMI. It is to be appreciated

that the display interface 218 will generate the various screens for presenting the search results in a three dimensional gird as will be described in more detail below.

The controller 214 is interconnected via a bus to several of the components of the device 200, including the input stream processor 202, audio processor 206, video processor 210, storage device 212, and a user interface 216. The controller 214 manages the conversion process for converting the input stream signal into a signal for storage on the storage device or for display. The controller 214 also manages the retrieval and playback of stored content. Furthermore, as will be described below, the controller 214 performs searching of content and the creation and adjusting of the gird display representing the content, either stored or to be delivered via the delivery networks, described above.

The controller 214 is further coupled to control memory 220 (e.g., volatile or non-volatile memory, including RAM, SRAM, DRAM, ROM, programmable ROM (PROM), flash memory, electronically programmable ROM (EPROM) , electronically erasable programmable ROM (EEPROM), etc.) for storing information and instruction code for controller 214. Control memory 220 may store instructions for controller 214. Control memory may also store a database of elements, such as graphic elements containing content, various graphic elements used for generating a displayed user interface for display interface 218, and the like. Alternatively, the memory may store the graphic elements in identified or grouped memory locations and use an access or location table to identify the memory locations for the various portions of information related to the graphic elements. In addition, various graphic elements can be generated in response to computer instructions interpreted by controller 214 for output to display interface 218. Additional details related to the storage of the graphic elements will be described below. Further, the implementation of the control memory 220 may include several possible embodiments, such as a single memory device or, alternatively, more than one memory circuit communicatively connected or coupled together to form a shared or common memory. Still further, the memory may be included with other circuitry, such as portions of bus communications circuitry, in a larger circuit.

Optionally, controller 214 can be adapted to extract metadata from audio and video media by using audio processor 206 and video processor 210, respectively. That is, metadata that is contained in video signal in the vertical blanking interval, auxiliary data fields associated with video, or in other areas in the video signal can be harvested by using the video processor 210 with controller 214 as to generate metadata that can be used for functions such as generating an electronic program guide, have descriptive information about received video, supporting an auxiliary information service, and the like. Similarly, the audio processor 206 working with controller 214 can be adapted to recognize audio watermarks that may be in an audio signal. Such audio watermarks can then be used to perform some action such as the recognition of the audio signal, security which identifies the source of an audio signal, or perform some other service. Furthermore, metadata to support the actions listed above can come from a network source which are processed by controller 214.

Turning now to FIG. 3, the user interface process of the present disclosure employs an input device that can be used to express functions, such as fast forward, rewind, etc. To allow for this, a tablet or touch panel device 300 (which is the same as the touch screen device 116 shown in FIG.1 and/or is an integrated example of media device 108 and touch screen device 116) may be interfaced via the user interface 216 and/or touch panel interface 222 of the receiving device 200. The touch panel device 300 allows operation of the receiving device or set top box based on hand movements, or gestures, and actions translated through the panel into commands for the set top box or other control device. In one embodiment, the touch panel 300 may simply serve as a navigational tool to navigate the grid display. In other embodiments, the touch panel 300 will additionally serve as the display device allowing the user to more directly interact with the navigation through the grid display of content. The touch panel device may be included as part of a remote control device containing more conventional control functions such as activator buttons. The touch panel 300 can also includes at least one camera element. As described in further detail below, content displayed on the touch panel device 300 may be zapped or thrown to the main screen (e.g., display device 114 shown in FIG. 1).

Turning now to FIG. 4, the use of a gesture sensing controller or touch screen, such as shown, provides for a number of types of user interaction. The inputs from the controller are used to define gestures and the gestures, in turn, define specific contextual commands. The configuration of the sensors may permit defining movement of a user's fingers on a touch screen or may even permit defining the movement of the controller itself in either one dimension or two dimensions. Two-dimensional motion, such as a diagonal, and a combination of yaw, pitch and roll can be used to define any three-dimensional motion, such as a swing. A number of gestures are illustrated in FIG. 4. Gestures are interpreted in context and are identified by defined movements made by the user.

Bumping 420 is defined by a two-stroke drawing indicating pointing in one direction, either up, down, left or right. The bumping gesture is associated with specific commands in context. For example, in a TimeShifting mode, a left-bump gesture 420 indicates rewinding, and a right-bump gesture indicates fast-forwarding. In other contexts, a bump gesture 420 is interpreted to increment a particular value in the direction designated by the bump. Checking 440 is defined as in drawing a checkmark. It is similar to a downward bump gesture 420. Checking is identified in context to designate a reminder, user tag or to select an item or element. Circling 440 is defined as drawing a circle in either direction. It is possible that both directions could be distinguished. However, to avoid confusion, a circle is identified as a single command regardless of direction. Dragging 450 is defined as an angular movement of the controller (a change in pitch and/or yaw) while pressing a button (virtual or physical) on the tablet 300 (i.e., a "trigger drag"). The dragging gesture 450 may be used for navigation, speed, distance, time-shifting, rewinding, and forwarding. Dragging 450 can be used to move a cursor, a virtual cursor, or a change of state, such as highlighting outlining or selecting on the display. Dragging 450 can be in any direction and is generally used to navigate in two dimensions. However, in certain interfaces, it is preferred to modify the response to the dragging command. For example, in some interfaces, operation in one dimension or direction is favored with respect to other dimensions or directions depending upon the position of the virtual cursor or the direction of movement. Nodding 460 is defined by two fast trigger-drag up-and-down vertical movements. Nodding 460 is used to indicate

“Yes” or “Accept.” X-ing 470 is defined as in drawing the letter “X.” X-ing 470 is used for “Delete” or “Block” commands. Wagging 480 is defined by two trigger-drag fast back-and-forth horizontal movements. The wagging gesture 480 is used to indicate “No” or “Cancel.”

5 Depending on the complexity of the sensor system, only simple one dimensional motion or gestures may be allowed. For instance, a simple right or left movement on the sensor as shown here may produce a fast forward or rewind function. In addition, multiple sensors could be included and placed at different locations on the touch screen. For instance, a horizontal sensor for left and right movement may be placed in one spot
10 and used for volume up and down, while a vertical sensor for up down movement may be place in a different spot and used for channel up and down. In this way specific gesture mappings may be used. As discussed in further detail below, a two finger swipe gesture may be utilized to initiate the throwing or moving of content from the tablet 300 to the main screen or display device 114.

15 FIG. 5 illustrates an exemplary embodiment of a user interface 500 showing a collection of media assets in accordance with the present disclosure. Specifically, display area 510 show a collection of media assets that a represented by different graphics/icons. These media assets such as 520 and 525 can be selected for playback by using a gesture/control interface command, whereby a media device will playback a selected
20 media asset by retrieving such an asset from a storage medium, requesting the asset from a server, activating an attached playback device, and the like. In particular, media assets 520 and 525 are known as movies which are shown by label 560 (videos). That is, different media assets can be grouped by different classifications which are shown when menu 570 is activated. The activation of media collection shelf 550 will be explained
25 below. The shading of FIG. 5 indicates the overlay of menu items 573 and 575 over the rest of the items shown in display area 510.

FIG. 6 illustrates an exemplary embodiment of a user interface 600 showing the activation of a menu for a collection of media assets. The activation of menu 570 displays other collections of media assets such as videos 573 and music 575 that can be
30 selected by a user. The selection of a new media collection can be cancelled if a user

activates the cancel operation shown for menu 570, which will keep the current media collection presently selected.

FIG. 7 illustrates an exemplary embodiment of a user interface 700 showing a collection of music media assets. 530 and 535 represent different music media assets that can be selected for playback in accordance with a playback gesture/control input command. As shown in this embodiment 700, an option slider control 590 is present that moves up and down as to allow one to see and select media assets not currently displayed in display area 510.

FIG. 8 illustrates an exemplary embodiment of a user interface 800 showing a collection of photo media assets. Such photo media assets such as 540 and 545 can be selected for playback in accordance with a playback gesture/control input gesture.

FIG. 9 illustrates an exemplary embodiment of a user interface 900 showing a collection of applications. These applications are computer programs which are capable of being executed on a media device. Examples of executable programs for a media device include games, news readers, browsers, event appointment program, and the like can be activated using a gesture/control interface command. Various applications shown include a game Random Roulette 547 and event count 549 which is an event appointment program. Other application can be used in accordance with the present principles.

FIG. 10 illustrates an exemplary embodiment of a user interface 1000 showing a number of media collections in the form of shelves in accordance with the present disclosure. When button 550/1050 is activated on display area 1010, a series of media collection shelves 1020 and 1030 are opened. A media collection shelf is used to organize and playback media assets in a specified order. That is, instead of using a generic playlist, a media collection shelf can be used to graphically show an order of media assets using the identifiers (graphics/icons) that are associated with such media assets. For example, media collection shelf 1020 entitled "my collection" displays two media assets 1027 and 1029 which are photos that can be playback if a play command is used. The order in which media assets are played in a media collection shelf goes from a left to a right order where for media collection shelf 1020, picture 1027 is displayed before picture 1029. Likewise, for media collection shelf 1037 entitled "trip", picture 1037 is played back before picture 1039. Other media collection shelves use this order to

playback media assets, where a mixture of media assets can also be mixed where videos, audio, pictures, applications, and the like can be played back in a specified order.

Label 1060 indicates that user interface 1010 is related to “collections”. Menu 1070 can be used to resume back to previous collection views as shown for user interfaces 500, 600, 700, 800, and 900. The activation of add collection button 1085 creates a new media collection shelf to be populated where the shelf can be named with a user designated label. Edit collection button 1080 lets a user change the order of media collection shelves whereby a user can select and drag a media collection shelf to a new position.

Activation of an edit button such as 1025 or 1035 brings up an interface as shown in FIG. 11 illustrating an exemplary embodiment of a user interface 1100 which is used for ordering a media collection with media assets in accordance with the present disclosure. By using a gesture/control input command, a user can select a media asset such as movies 1040 or 1045 and drop such media assets into the media shelf collection 1030. The selection of a media asset for a media shelf collection allows a user to place the media asset before, after, or in between media assets that are already shown on a media shelf collection. Hence, if a user selects 1040 to be part of media collection 1030, the graphic representing 1040 can be placed before media asset 1037, in between assets 1037 and 1039, or placed after media asset 1039. Also, the activation of delete control 1080 removes a media asset from a media collection shelf. It is expected that in the edit mode, each media asset in a media collection shelf will have a corresponding delete control.

The activation of menu 1070 for user interface 1100 will let a user select media assets from different media collections as shown in user interfaces 500, 600, 700, 800, and 900 when constructing a media collection shelf. The activation of 1090 indicates that a user is done constructing a media collection shelf, while the activation of cancellation button 1095 cancels any of the modifications made to a media collection shelf. Label 1060 indicates that the presently created media collection shelf is called “trip”.

FIG. 12 illustrates an exemplary embodiment of a user interface 1200 displaying media assets in accordance with the present invention. Information about the media assets

is shown in TABLE I. The displayed media assets in display area 1210 are designated by icons, graphics, poster art, screenshots, and the like that correspond to such media assets.

Number of Asset	Type of Asset	Title	Location	Length (min/sec) Ta	Actor	Director	Rating
1220	Video	Susie Sampson Tackles Labor	http://www.youtube.com/watch?v=rkeinrXESFI	10:00	Koppell, Jackie	Koppell, Jackie	5
1221	Video	The Life Aquatic with Steve Zissou	Local Storage	120:00	Murray, Bill; Wilson, Owen; Huston, Anjelica	Anderson, Wes	3
1222	Video	Swamp Thing	Local Storage	115:00	Benson, Bluto; Dean, James	Moore, Allan	1
1223	Video	Susie Sampson Tackles Debt	http://www.youtube.com/watch?v=K6asl2L3wak	20:00	Koppell, Jackie	Koppell, Jackie	4
1224	Video	Community Television Show – Season 2, Episode 3	http://www.hulu.com/watch?v=communityseason2episode3	30:00	McHale, Joel; Chase, Chevy	Brown, Doc	2.5
1225	Audio	Hey Jude	Local Storage	10:00	Beatles	Beatles	5
1226	Video	Susie Sampson Tackles Social Security	http://www.youtube.com/watch?v=oTSAi3TSJn4	30:00	Koppell, Jackie	Koppell, Jackie	5
1227	Video	Without a Home	Local Storage	90:00	Fleischer, Rachel	Fleischer, Rachel	5
1228	Audio	Rock It	http://www.cloudmusic.com/sj3jf	10:00	Hancock, Herbie	Hancock, Herbie	2.5

In the description of TABLE I, number of asset represents the number shown in the figures of a described media asset. Type of asset corresponds to the category of a media asset being audio, video, program, and the like. Title represents the name of a media asset. Location is the physical location of a media asset which can be local memory storage, remote memory storage, a server, a video on demand service, a cloud storage service, a streaming media service, and the like. Notably, TABLE I accommodates media in different locations as long as there is information that references the location of a media asset. Length is the length of time in minutes and seconds of a media asset. Such a value is known as the time length of a media asset as denoted by a value Ta. The actor field lists the actors performing in a media asset. Optionally, when a media asset is audio, the actor field represents the name of the band or performer responsible for the audio. The director field represents the director of a media asset. The ratings field represents a critical rating (0-5) that a media asset has received from a critic or is an averaged rating score from a source such as RottenTomatoes.com. The information of TABLE I can be generated from metadata that comes with a media asset, from electronic program guide information, from a local database, from a remote database, a metadata descriptive service, a combination of these sources, and the like.

FIG. 13 illustrates an exemplary embodiment of a user interface 1300 that specifies a time length for a media collection shelf in accordance with the present invention. A user can be presented with an option to construct a media collection shelf of a certain time length. Such an option is shown in dialog box 1230 where a user can specify a length of time in hours and minutes that they want the media collection shelf to occupy.

In FIG. 14, an exemplary embodiment of a user interface 1400 that displays a media collection shelf generated in view of a user instruction in accordance with the present disclosure. Specifically, a user has specified in dialog box 1230 that a media collection shelf 1240 will be 1 hour and zero minutes. The length of media collection shelf 1240 is proportional to the length of time in which a user has specified, where for example a media collection shelf that is two hours long will be twice the length of a media collection shelf that is one hour long. An example a two hour long media

collection shelf 1242 is shown in FIG. 15 which is an exemplary embodiment of a user interface 1500 that display an alternative media collection shelf generated in view of a user instruction in accordance with the present disclosure. Likewise, a media collection shelf that is a half hour is half the size of a media collection shelf that is an hour.

5 FIG. 16 illustrates an exemplary embodiment of different media collection shelves which have varying lengths. As stated before, the length of a displayed media collection shelf is proportional to the time duration allocated for the shelf. For example, media collection shelf 1240 comports to an hour of time, while media collection shelf 1242 is for two hours. Media collection shelf 1244 is for a three hour time length, media
10 collection shelf 1246 is for a half hour, and shelf 1248 represents fifteen minutes. Other sizes of a media shelf can be generated in accordance with the described principles. Ideally, the length of media shelves will be varied while the height will remain relatively constant.

 FIG. 17 illustrates an exemplary embodiment of a user interface 1700 of a media
15 collection shelf and a selected media asset in accordance with the present disclosure. As presented in display area 1210, a media asset 1224 is selected to be placed within media collection shelf 1240. When a media asset is selected, an outline of where a media asset previously located is shown in box 1254, whereby the display of such an outline is optional.

20 FIG. 18 illustrates an exemplary embodiment of a user interface 1800 with a media collection shelf and a graphic representing a media asset that is scaled in proportion to the length of time the media asset represents in accordance with the present disclosure. When media asset 1224 is placed within media collection shelf 1240, the size of media asset 1224 is scaled in accordance with the amount of time that the media asset
25 runs. Referring to TABLE 1, media asset 1224 runs for thirty minutes and media collection shelf 1240 is for one hour. Hence, media asset 1224 is lengthened to occupy one half of the area of media collection shelf 1240. This can be calculated by taking the time of a selected media asset and dividing the time value by the total time for a media collection shelf ($30 \text{ minutes} / 60 \text{ minutes} = .5$). The described time calculations and
30 graphic modification of a representation of a media asset can be performed by video processor 210 and controller 214 in a media device.

FIG. 19 illustrates an exemplary embodiment of a user interface 1900 with a media collection shelf and graphics representing media assets that are scaled in proportion to the length of time the media assets represent in accordance with the present invention. As shown in display area 1210, the selected media assets 1223, 1224, and 1225 are selected to be placed within media collection shelf 1240. After such a selection, media asset 1223 is scaled to occupy one third of the area of media collection shelf 1240 (20 minutes/60 minutes = 1/3). Media asset 1224 is scaled to occupy one half of the area of media collection shelf 1240 (30 minutes / 60 minutes = 1/2). Lastly, media asset 1225 is scaled to occupy one sixth the area of media collection shelf 1240 (10 minutes / 60 minutes = 1/6). With the selection of media assets 1223, 1224, and 1225 where the total duration of the media asset is an hour, it is shown that media collection shelf 1240 will be completed occupied because the shelf is constructed to be an hour long. If media collection shelf is then used for playback, media assets 1223, 1224, and 1225 will be played back in that specific order (left to right). The display of outlines 1253, 1254, and 1255 are optional.

FIG. 20 illustrates an exemplary embodiment of a user interface 2000 with a media collection shelf and graphics representing media assets that are scaled in proportion to the length of time the media assets represent in accordance with the present invention. In this current example, media assets 1220, 1223, and 1226 are selected for media collection shelf 1240. The representation of media assets 1220, 1223, and 1226 are transformed to occupy one sixth, one third, and one half of media collection shelf respectively because of the associated time lengths of such media assets. The display of outlines 1250, 1253, and 1256 are optional.

FIG. 21 illustrates an exemplary embodiment of a user interface 2100 indicating an error message when a media asset exceeds that length of time afforded to a media collection shelf in accordance with the present disclosure. In this example, the media collection shelf is designated as being an hour long, but a selected media asset 1221 is two hours in length. When the length of a media asset is longer than the free space in a media collection shelf, an error dialog such as shown in 1260 is displayed. The dialog can use information from TABLE I in filling out the time and title fields. A user with

such a dialog can determined whether or not they want to continue with the selection of the media asset or cancel such a selection.

FIG. 22 provides an exemplary embodiment 2200 of an example of when the user decides to resize the displayed media collection shelf, where media collection shelf 1242 which is two hours in length replaces previously shown media collection shelf 1240 which corresponded to an hour. The selection of media asset 1221 then will completely occupy lengthwise collection shelf 1242 (120 minutes / 120 minutes = 1).

FIG. 23 illustrates an exemplary embodiment of a user interface 2300 with an option to indicate the media assets that would fill the remaining time left for a media collection shelf in accordance with the present disclosure. As shown in display area 1210, a media collection shelf 1240 is designed to be an hour in length. Already, a media asset 1224 is selected whereby the size of the media asset 1224 takes up half the size of the media collection shelf 1240 (30 minutes / 60 minutes). An option as shown in dialog box 1265 can be activated as to show other media assets that can be selected for media asset 1224 to fill the remaining time left in media collection shelf 1240.

FIG. 24 illustrates an exemplary embodiment of user interface 2400 where the media assets that can occupy the remaining space in a media collection shelf are shown. Because media shelf 1240 still can accommodate media assets that total up to 30 minutes in time, media assets 1220, 1223, 1225, 1126, and 1128 are outlined as fulfilling this criteria.

FIG. 25 illustrates an exemplary embodiment of a user interface 2500 indicating the associated critic ratings associated with media assets in accordance with the present disclosure. In this embodiment, a ratings mode 1270 is activated where rating information from TABLE I is used to scale the size of media assets. Specifically, the size of a media asset is scaled by taking the rating score of the media asset and dividing the number by the maximum score on the scale (in this case five). Hence, media asset 1220 will be sized at a “full size” because of the five star rating of the media asset (5 stars / 5 stars = 1). Alternatively, media asset 1222 for Swamp Thing is one-fifth the size (1 star / 5 stars = 1/5). Other media assets will be affected in a similar manner as described above.

FIG. 26 presents a flow chart 2600 for populating a media collection shelf with graphical representations of media assets in accordance with the present disclosure. In step 2605, a number of graphical elements comports to different media assets are shown in a display area. Several examples of the display of graphical elements are shown in FIGS. 5-9 and are referenced throughout this specification. A graphical element can be an icon, a picture, a screenshot, a graphical representation of a media asset, and the like.

Step 2610 represents the generation of a media collection shelf where the horizontal length of the shelf is proportional to a time duration value (T_s) selected by a user. As described previously, a user can specify that a media collection shelf have a time duration value that is the total amount of time that is afforded to assets that will eventually occupy the media collection shelf. For example, a user can specify that a media collection shelf be an hour whereby media assets that are eventually selected for the media selection shelf should not exceed an hour in cumulative time duration (T_c) where T_c is equal to the total time value of all of the previously selected media assets [$T_c = T_a(1) + T_a(2) + T_a(3) \dots T_a(n)$, $n = \text{total number of assets selected}$].

Step 2615 will populate a media collection shelf with a graphical element representing a selected media asset, when such an asset is selected by a user. A graphical element representing an audio, video, application, or other type of media asset can be dragged and dropped into the area afforded to a media collection shelf. The positioning of the graphical element in the media collection shelf represents that a media asset can be associated with the media collection shelf and/or the media asset will be played back when the media collection shelf is activated for playback.

Determining whether a time duration of a selected media asset exceeds the total time duration left for a media collection shelf is calculated in step 2620. As explained above for step 2610, a time duration value is associated with a media collection shelf. When media assets are added to a media collection shelf, a device can calculate the whether the time duration of a media asset plus the cumulative time of previously selected media assets exceed the time duration of a media collection shelf ($T_a + T_c > T_s$). If this statement is true, a message can be generated to indicate that the time of the

selected media asset exceeds the remaining time left for a media collection shelf (as shown in FIG. 21).

If this calculation is not true, then step 2625 takes place where the corresponding graphical element is scaled in a horizontal direction as compared to the duration of the time associated with the media collection shelf. This scaling operation can take the graphical element associated with a media asset and cause the element to occupy (lengthwise) a certain proportion of the media collection shelf. One approach for calculating this value takes T_a/T_s and multiplies this value by the length of the media collection shelf. The selected graphical element is then scaled to this calculated length in accordance with the principles listed herein. Other approaches are also implementable in accordance with the principles described herein.

Step 2630 will determine if the media shelf collection can accommodate an additional selected media asset because the duration value of the shelf is not exceeded by the cumulative duration of time of previously selected media assets. This is similar to the calculation performed in step 2620, where T_c is updated with the T_a ($T_c = T_c$ (previous time value) + T_a) corresponding to a selected media asset. If $T_c < T_s$, then steps 2620-2630 can be repeated until $T_c = T_s$. Of course this repetition in steps 2620-2630 does not need to take place, where a user can opt to have step 2635 performed directly. Optionally, a user can request that the user interface display all of the media assets with a time T_a that is less than $T_s - T_c$. The result of this request is shown in FIG. 24.

If $T_c = T_s$ or a user opts to skip the repetition of steps 2620-2630, step 2635 can take place where all of the selected media assets whose graphical elements populate a media collection shelf can be played back. The playback of media assets can be performed in accordance with the principles described throughout this specification, where such media assets can be played from remote or local sources using the components as represented in FIGS 1 and 2.

It should be understood that the elements shown in the FIGS. may be implemented in various forms of hardware, software or combinations thereof. Preferably, these elements are implemented in a combination of hardware and software on one or more appropriately programmed general-purpose devices, which may include a processor, memory and input/output interfaces.

The present description illustrates the principles of the present disclosure. It will thus be appreciated that those skilled in the art will be able to devise various arrangements that, although not explicitly described or shown herein, embody the principles of the disclosure and are included within its scope.

All examples and conditional language recited herein are intended for informational purposes to aid the reader in understanding the principles of the disclosure and the concepts contributed by the inventor to furthering the art, and are to be construed as being without limitation to such specifically recited examples and conditions.

Moreover, all statements herein reciting principles, aspects, and embodiments of the disclosure, as well as specific examples thereof, are intended to encompass both structural and functional equivalents thereof. Additionally, it is intended that such equivalents include both currently known equivalents as well as equivalents developed in the future, i.e., any elements developed that perform the same function, regardless of structure.

Thus, for example, it will be appreciated by those skilled in the art that the block diagrams presented herein represent conceptual views of illustrative circuitry embodying the principles of the disclosure. Similarly, it will be appreciated that any flow charts, flow diagrams, state transition diagrams, pseudocode, and the like represent various processes which may be substantially represented in computer readable media and so executed by a computer or processor, whether or not such computer or processor is explicitly shown.

The functions of the various elements shown in the figures may be provided through the use of dedicated hardware as well as hardware capable of executing software in association with appropriate software. When provided by a processor, the functions may be provided by a single dedicated processor, by a single shared processor, or by a plurality of individual processors, some of which may be shared. Moreover, explicit use of the term “processor” or “controller” should not be construed to refer exclusively to hardware capable of executing software, and may implicitly include, without limitation, digital signal processor (“DSP”) hardware, read only memory (“ROM”) for storing software, random access memory (“RAM”), and nonvolatile storage.

Other hardware, conventional and/or custom, may also be included. Similarly, any switches shown in the figures are conceptual only. Their function may be carried out through the operation of program logic, through dedicated logic, through the interaction
5 of program control and dedicated logic, or even manually, the particular technique being selectable by the implementer as more specifically understood from the context.

Although embodiments which incorporate the teachings of the present disclosure have been shown and described in detail herein, those skilled in the art can readily devise many other varied embodiments that still incorporate these teachings. It is noted that
10 modifications and variations can be made by persons skilled in the art in light of the above teachings.

CLAIMS

1. A method for generating a user interface comprising the steps of:

5 generating a display area containing graphical elements corresponding to a plurality of media assets, where each graphical element corresponds to a media asset from the plurality of media assets;

10 generating a media collection shelf that has a horizontal length proportional to a selected time duration value; and

15 generating the media collection shelf with a graphical element of a selected media asset from the plurality of media assets, wherein the graphical element of a selected media asset is scaled horizontally in proportion to the time duration of the media asset compared to the selected time duration value of the media collection shelf.

20 2. The method of Claim 1 further comprising the step of determining whether the time duration of the media asset exceeds the value of the selected time duration value of the media collection shelf, and generating a message indicting this condition if true, otherwise generating the media collection shelf with the graphical element of the selected media asset is performed.

3. The method of Claim 2 comprising the additional steps of:

25 calculating a cumulative value of time for media assets previously selected by totaling the time duration value of all previously selected media assets that populate the media collection shelf; and

30 repeating the populating step for newly selected media assets from the plurality of media assets until the cumulative value of time is equal to the selected time duration of the media collection shelf.

4. The method of Claim 2 comprising the additional steps of:

5 calculating a cumulative value of time for media assets previously selected by
totaling the time duration value of all previously selected media assets that
populate the media collection shelf; and

10 indicating media assets that can be selected for inclusion within the media shelf
collection when the cumulative value of time is less than the selected time
duration of the media collection shelf by changing the graphical elements
associated with the media assets that can be selected for inclusion.

15 5. The method of Claim 4, wherein the media assets that can be selected for
inclusion are selected by calculating the media assets that have times of duration
that are less than the difference of the selected time duration of the media
collection shelf and the cumulative value of time for media assets previously
selected.

20 6. The method of Claim 1 comprising the additional step of playing all of the media
assets from the plurality of media assets whose elements populate the media
collection shelf.

25 7. The method of Claim 6, wherein the playback of the media assets is performed in
an order where the graphical elements of media assets in the media collection
shelf towards the left edge of the shelf are played before the graphical elements of
the media asset towards the right of the shelf.

8. The method of Claim 1 wherein a label is assigned to the media collection shelf.

9. The method of Claim 1 wherein a previously selected media asset is deleted from the media collection shelf by activating a delete function.

5 10. The method of Claim 1, wherein the graphical elements of the plurality of media assets are scaled horizontally in accordance to their corresponding ratings.

11. The method of Claim 1, wherein the plurality of media assets comprise audio, video, applications, and pictures.

10 12. A device for generating a user interface comprising the steps of:

means for generating a display area containing graphical elements corresponding to a plurality of media assets, where each graphical element corresponds to a media asset from the plurality of media assets;

15

means for generating a media collection shelf that has a horizontal length proportional to a selected time duration value; and

20

means for generating the media collection shelf with a graphical element of a selected media asset from the plurality of media assets, wherein the graphical element of a selected media asset is scaled horizontally in proportion to the time duration of the media asset compared to the selected time duration value of the media collection shelf.

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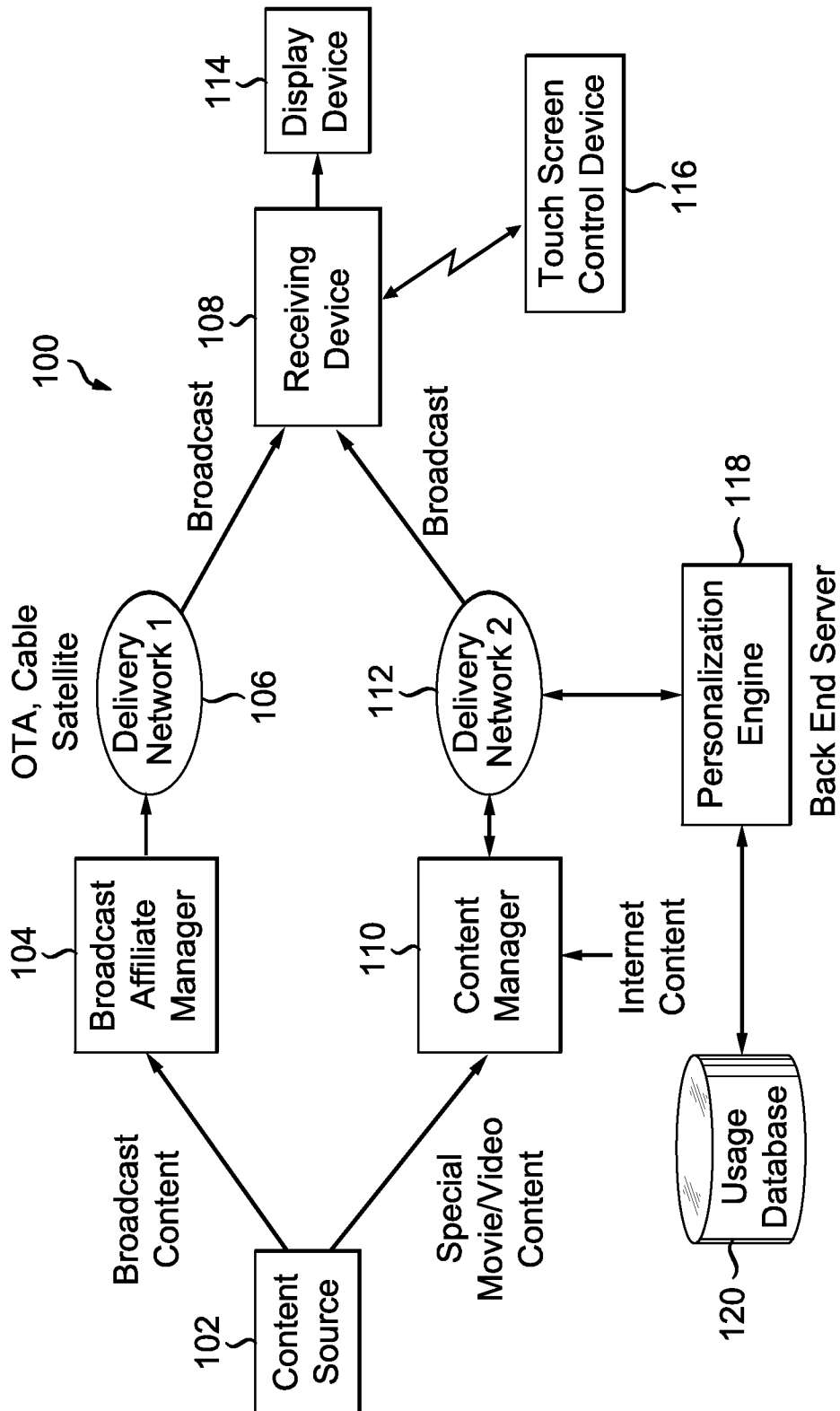


FIG. 1

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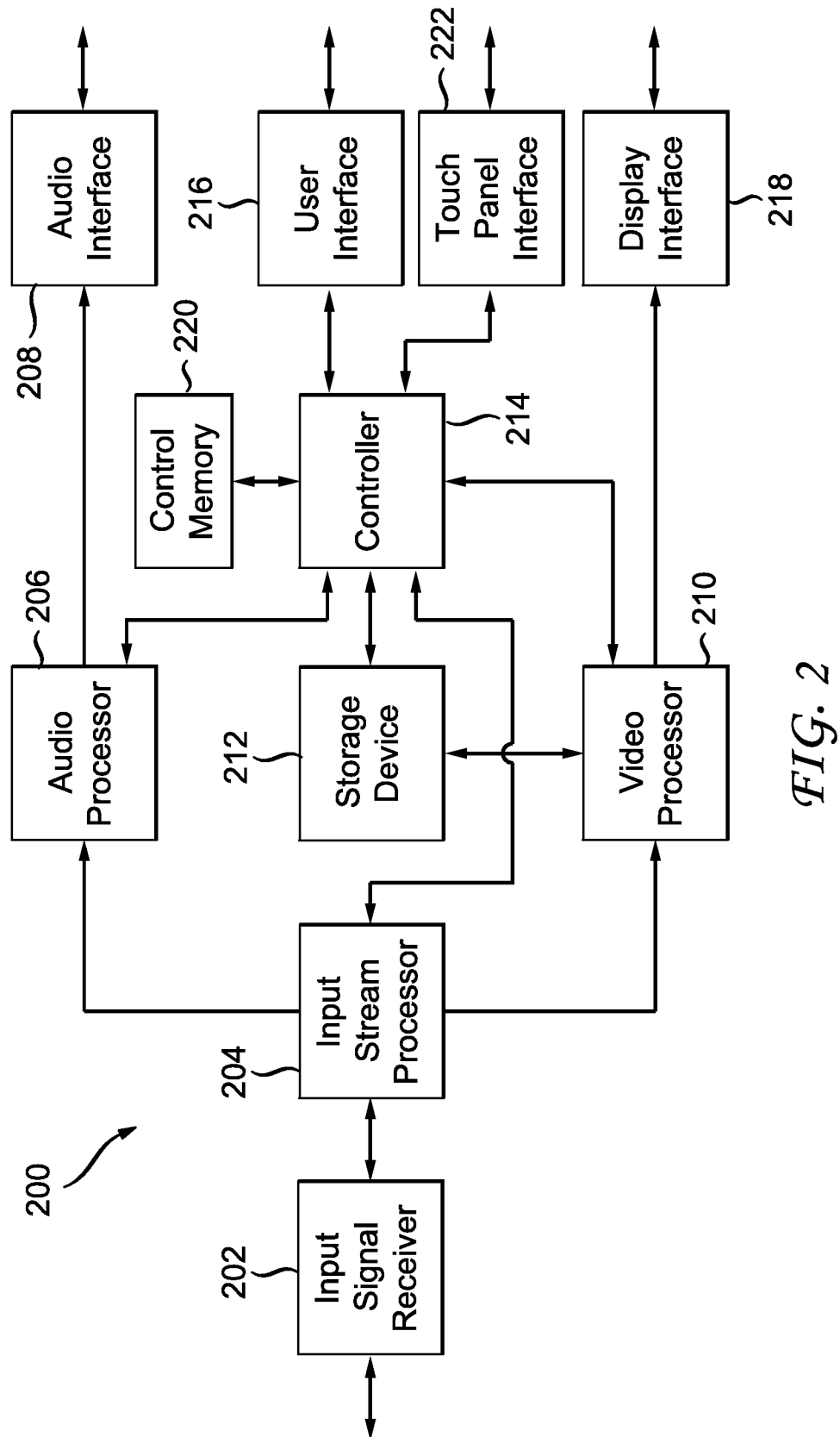


FIG. 2

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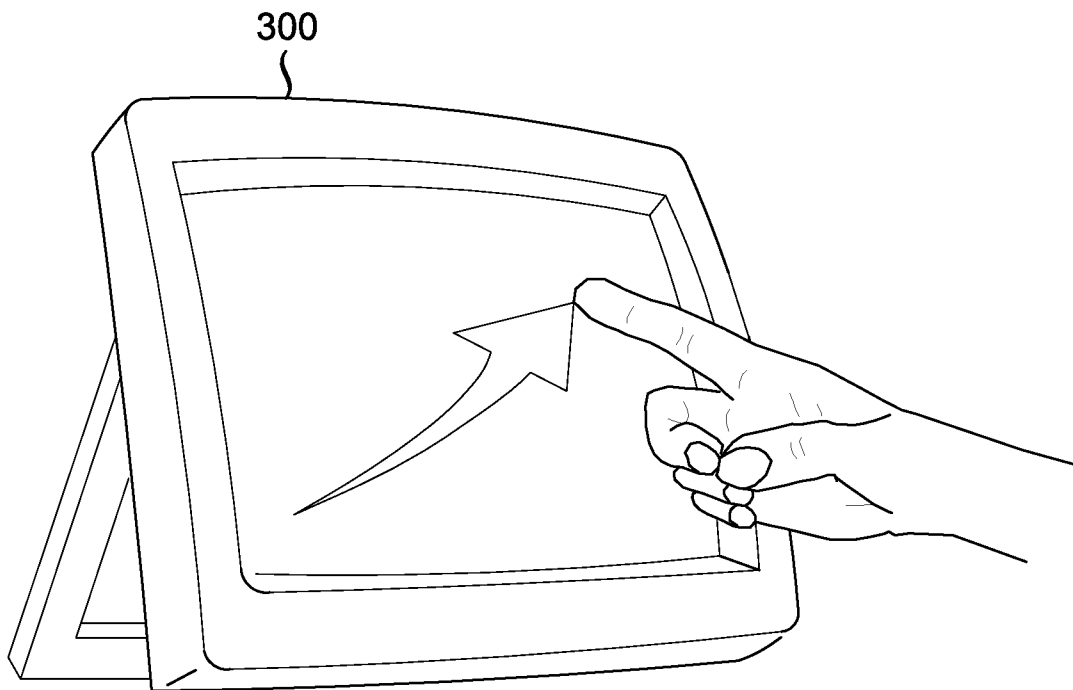


FIG. 3

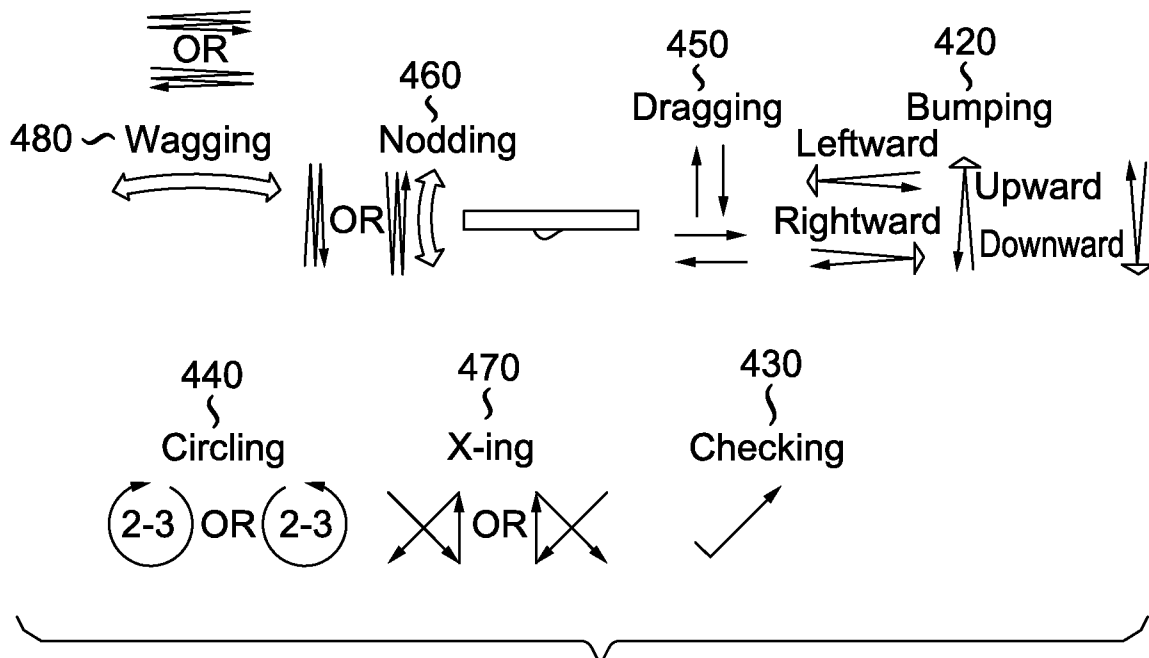
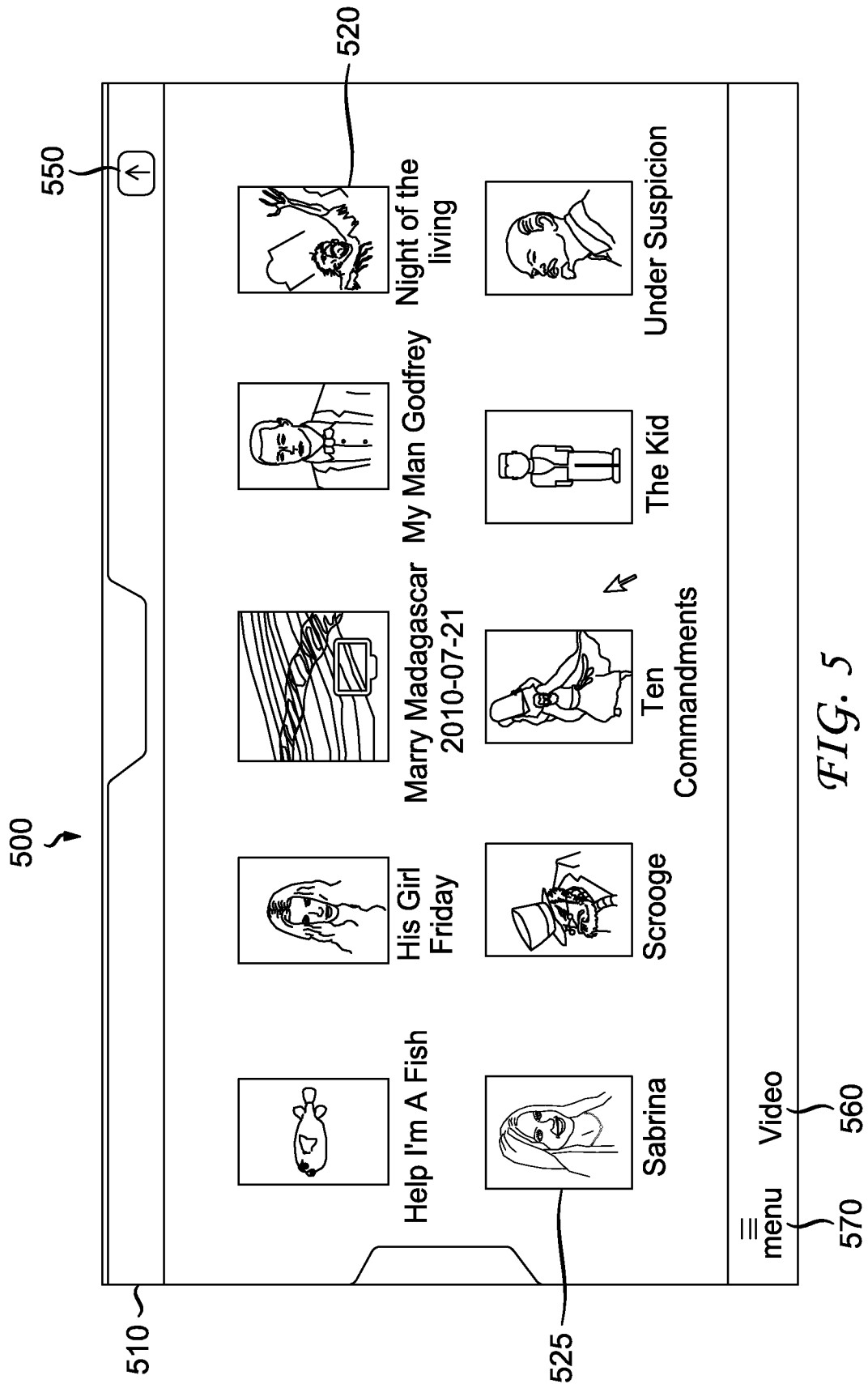


FIG. 4

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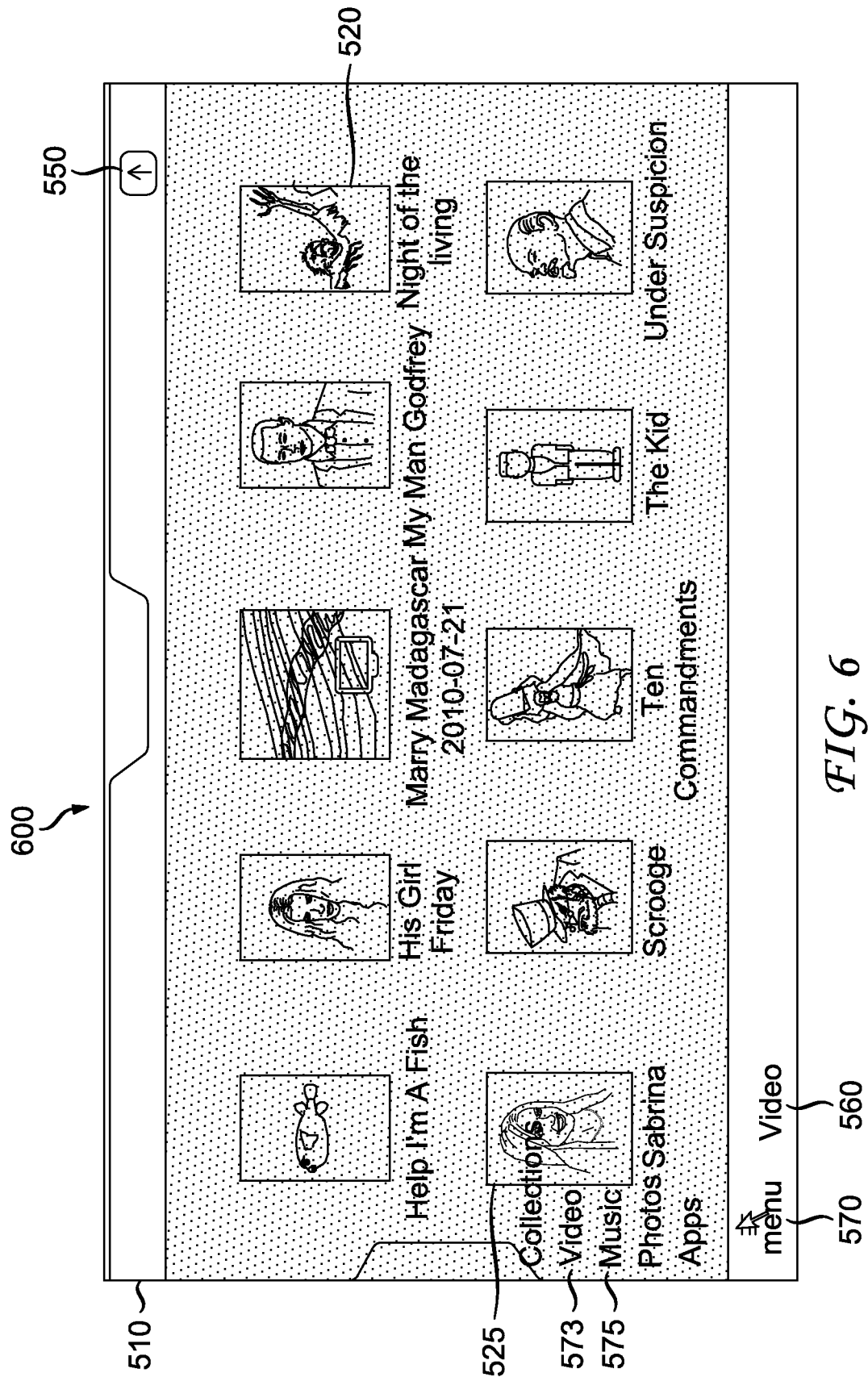
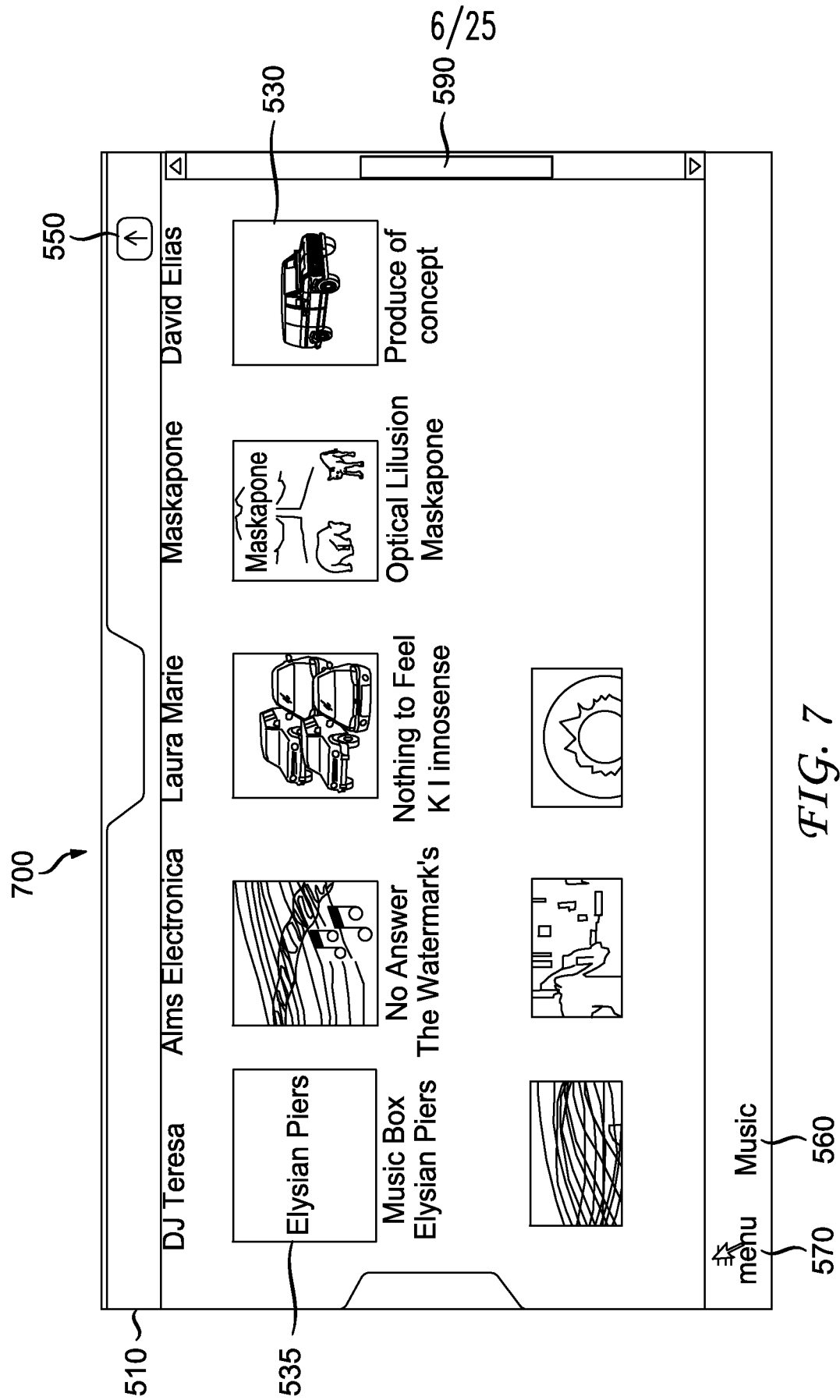
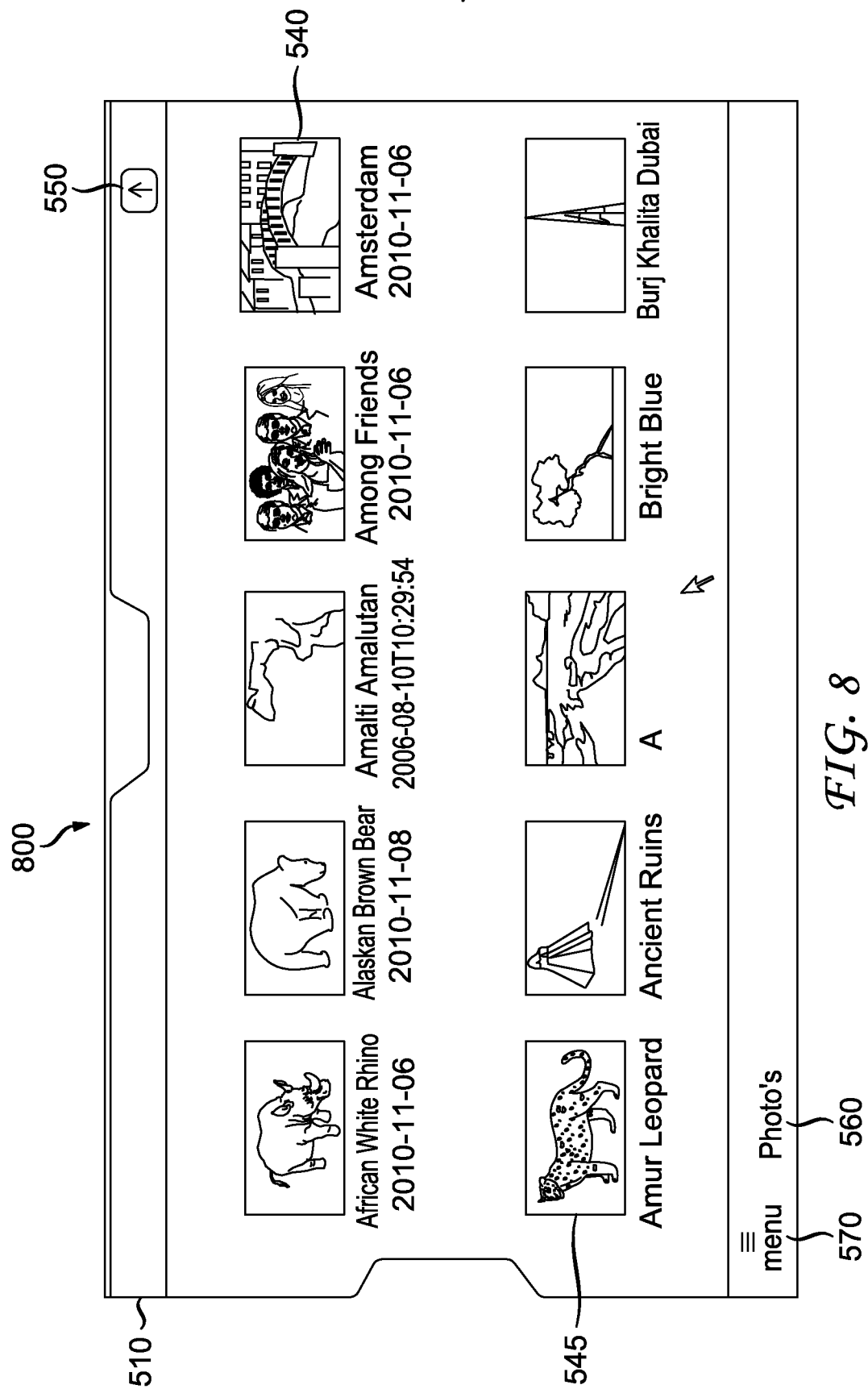


FIG. 6





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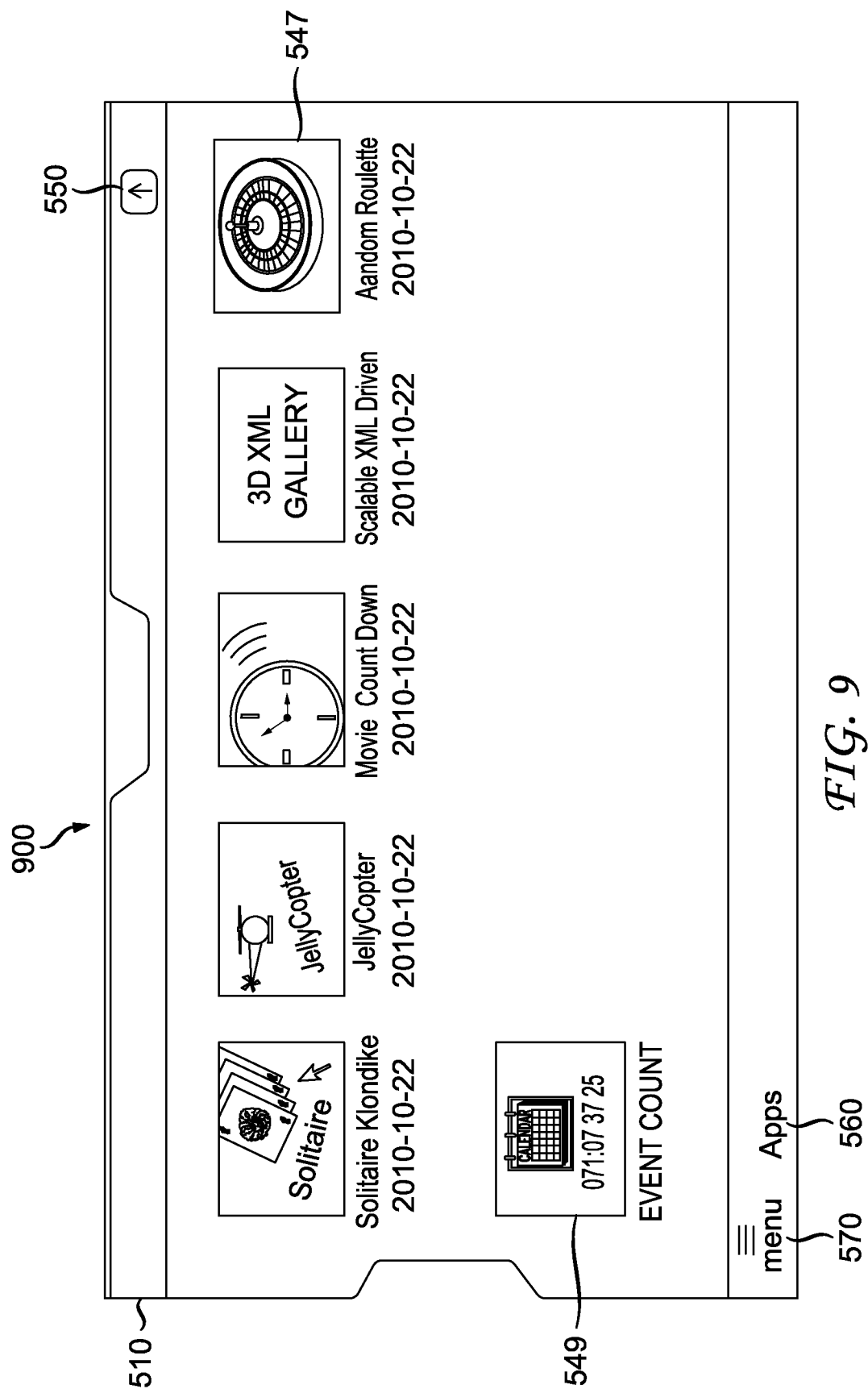


FIG. 9

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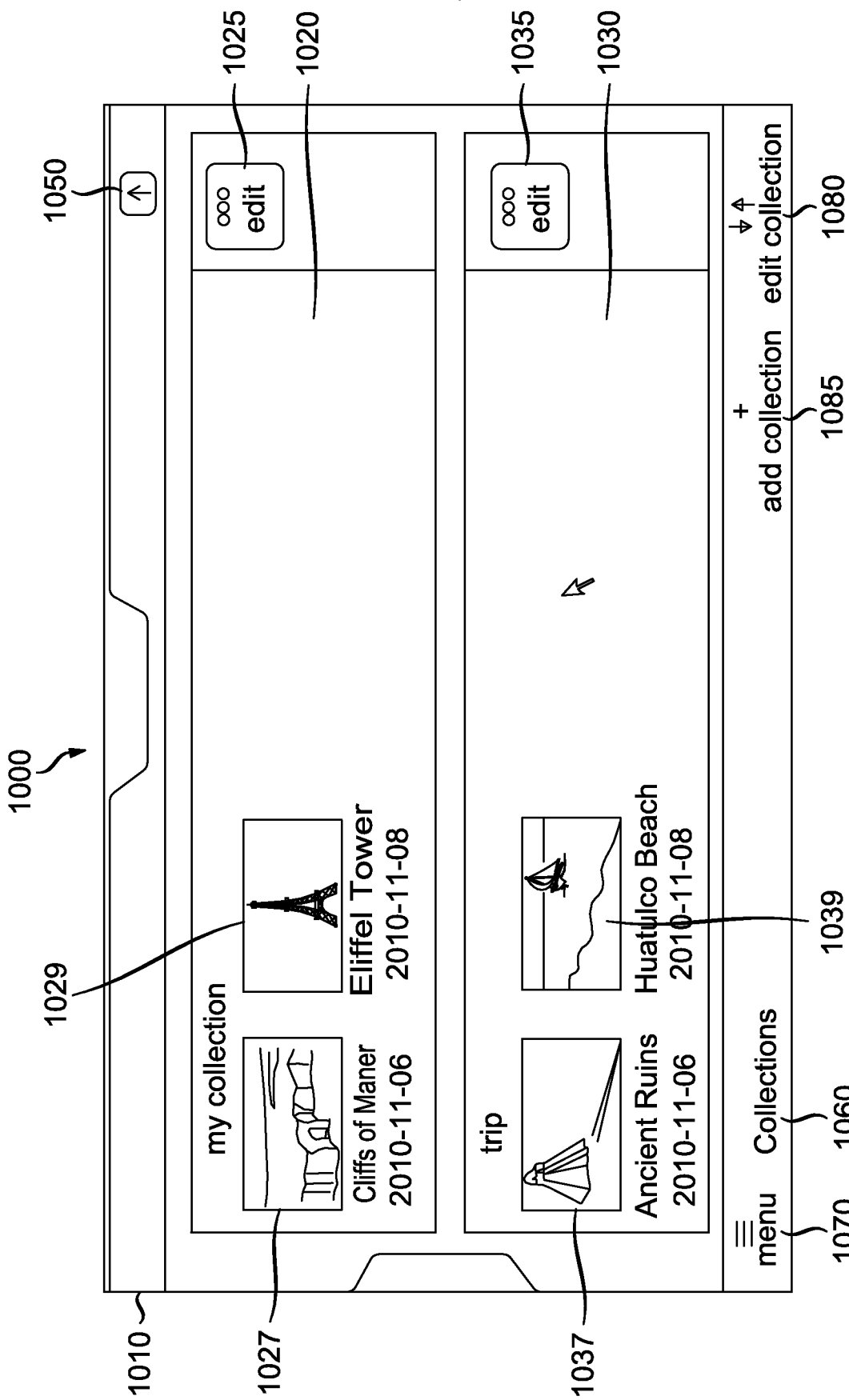


FIG. 10

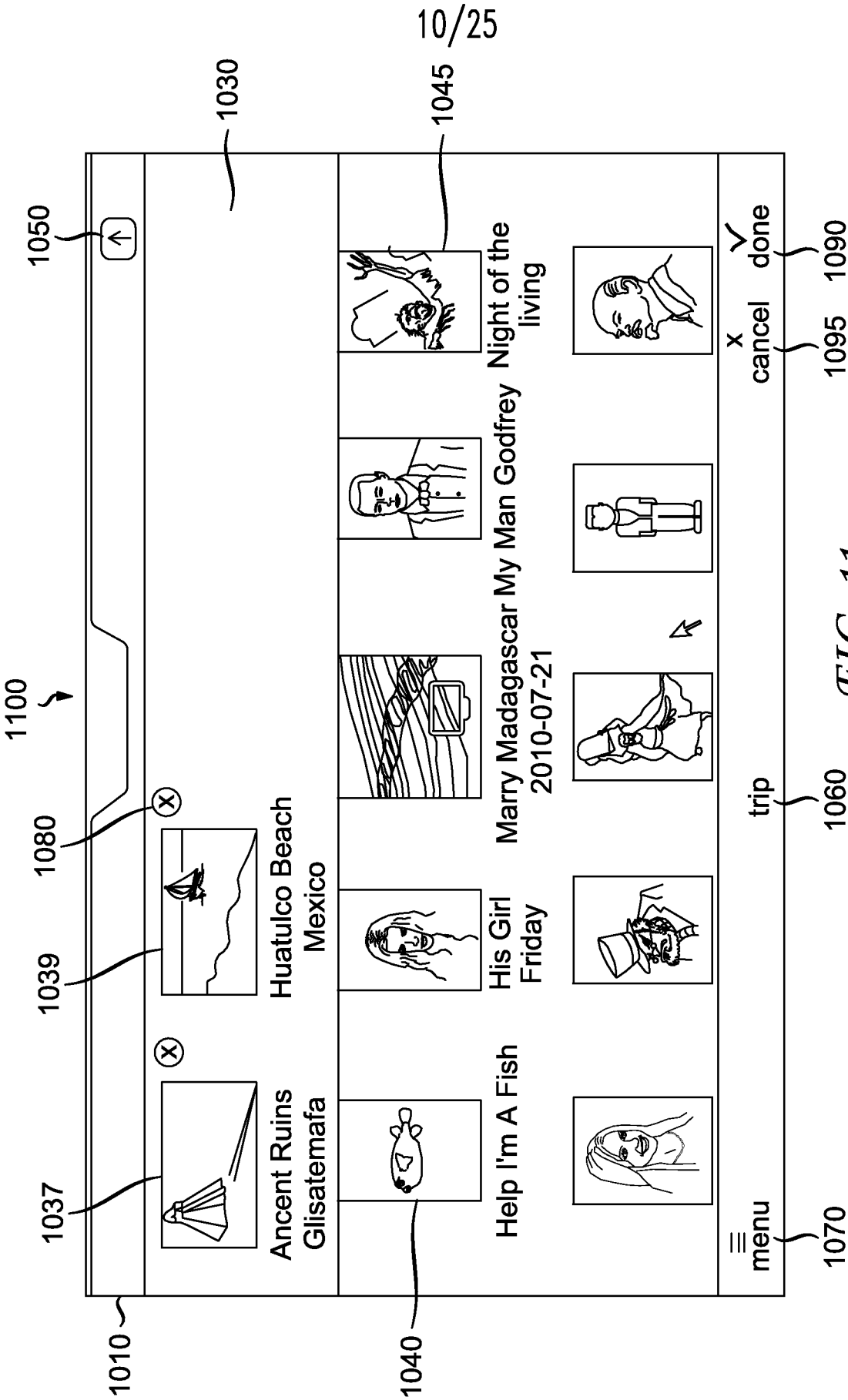
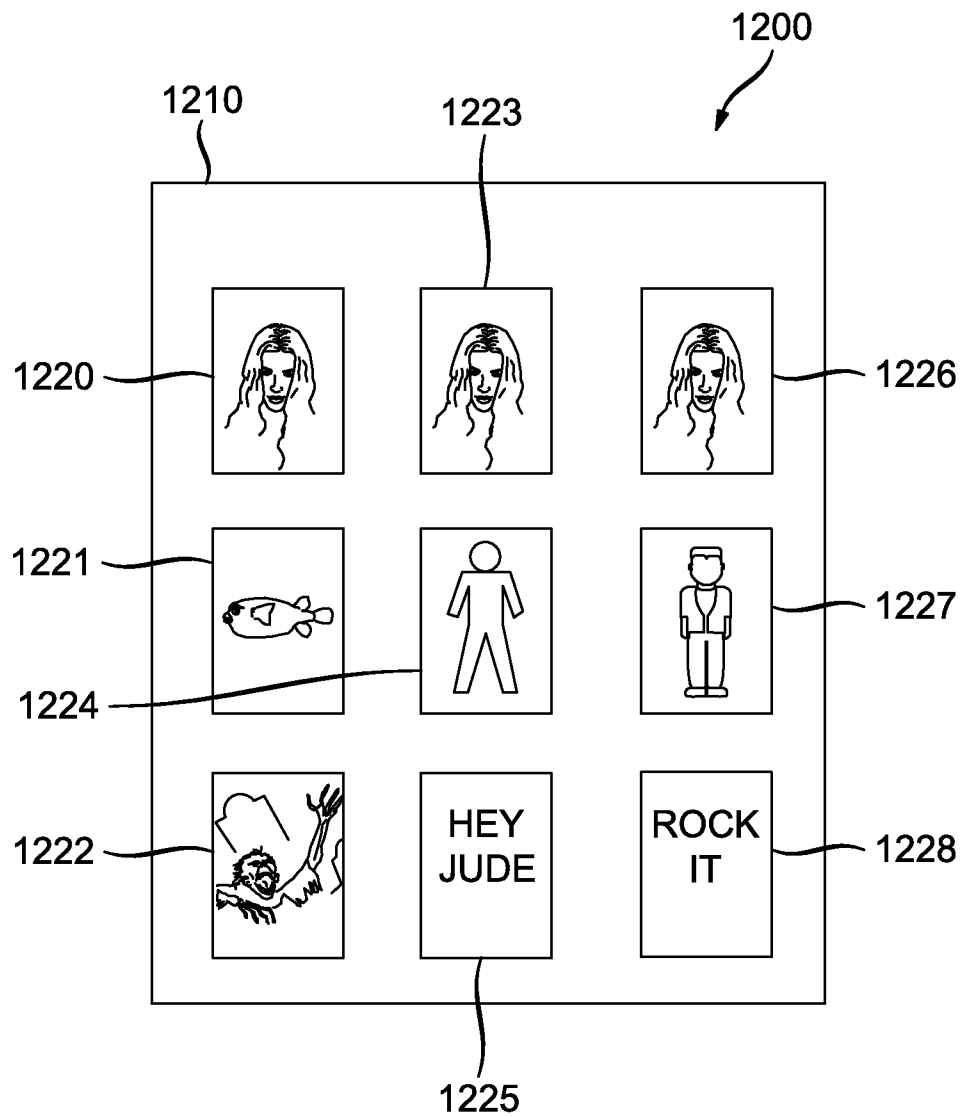


FIG. 11

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*FIG. 12*

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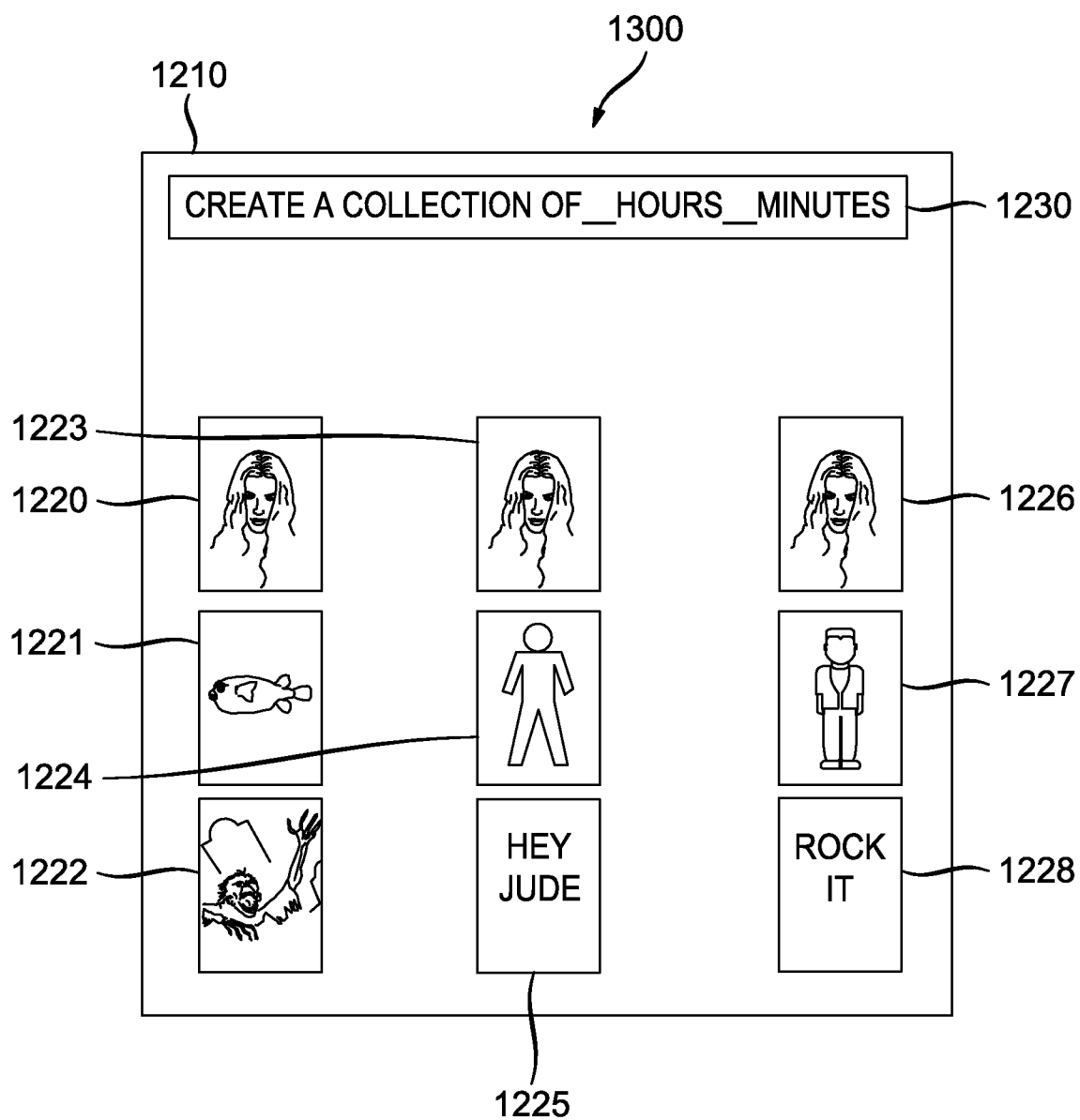
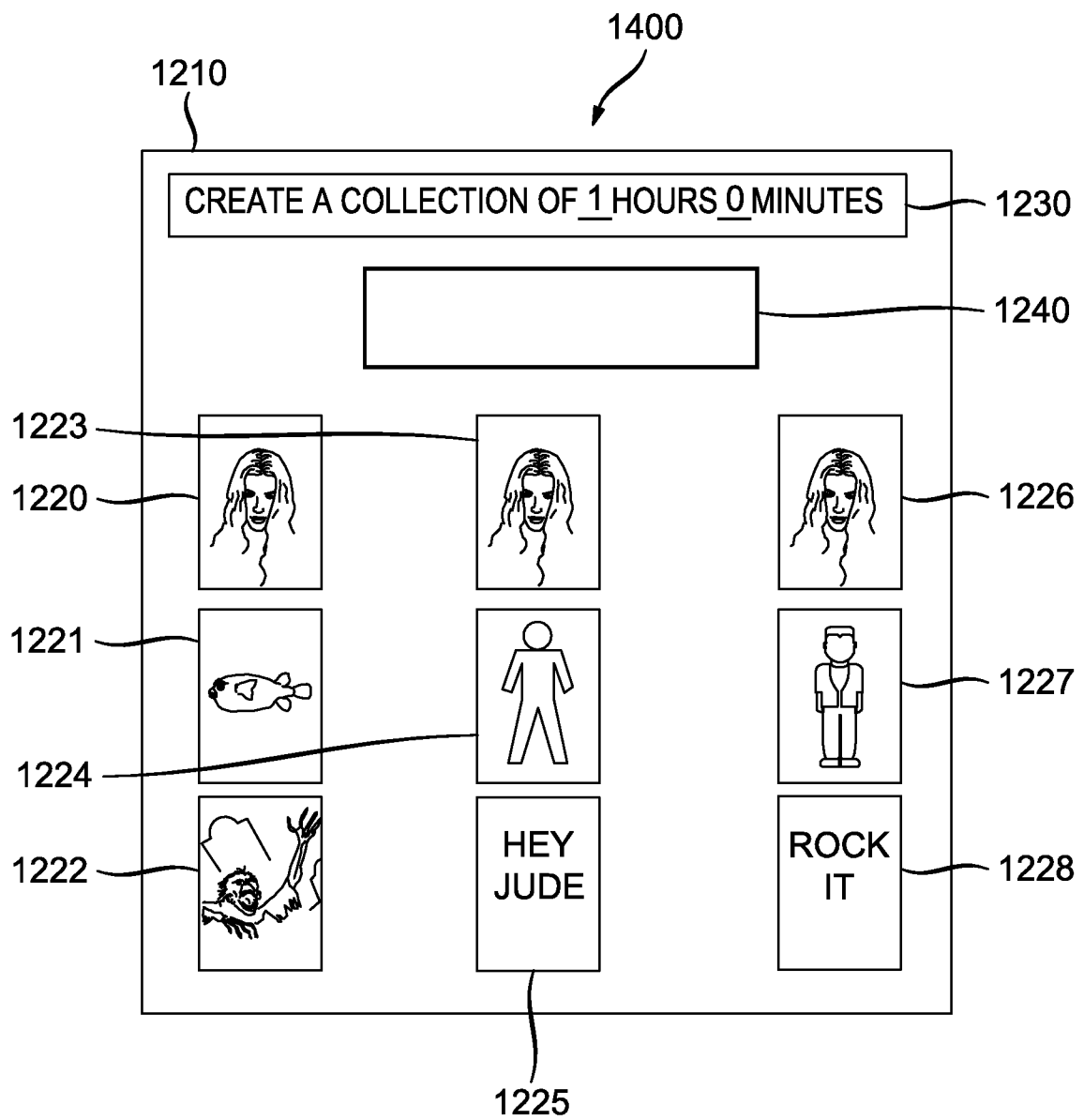


FIG. 13

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*FIG. 14*

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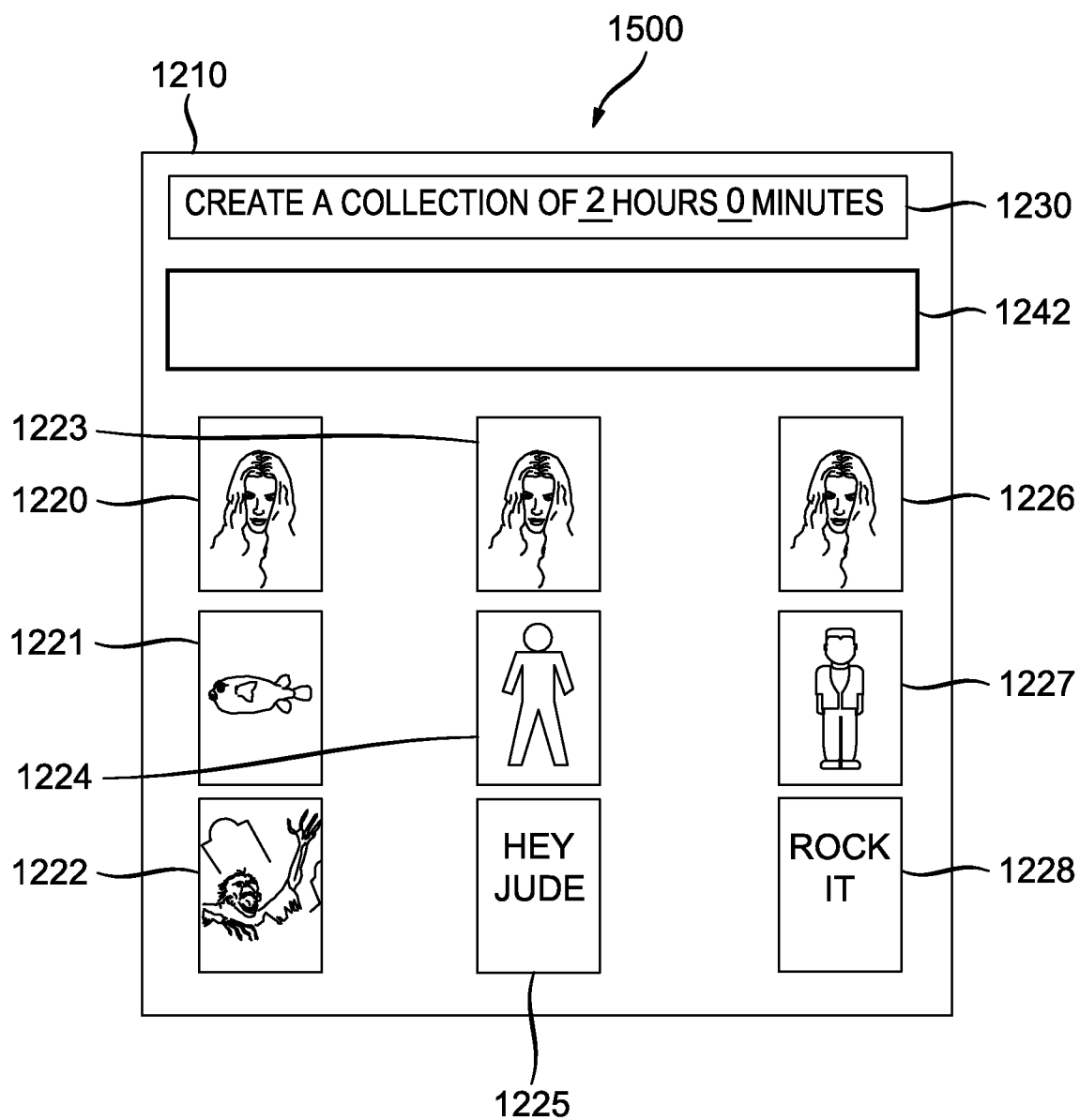


FIG. 15

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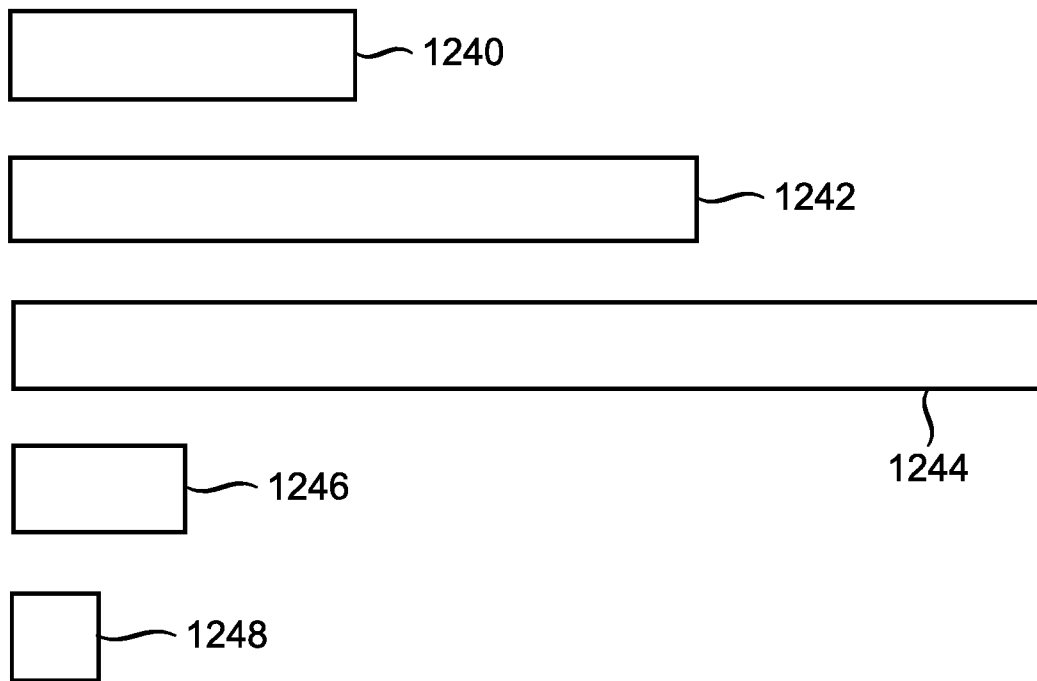


FIG. 16

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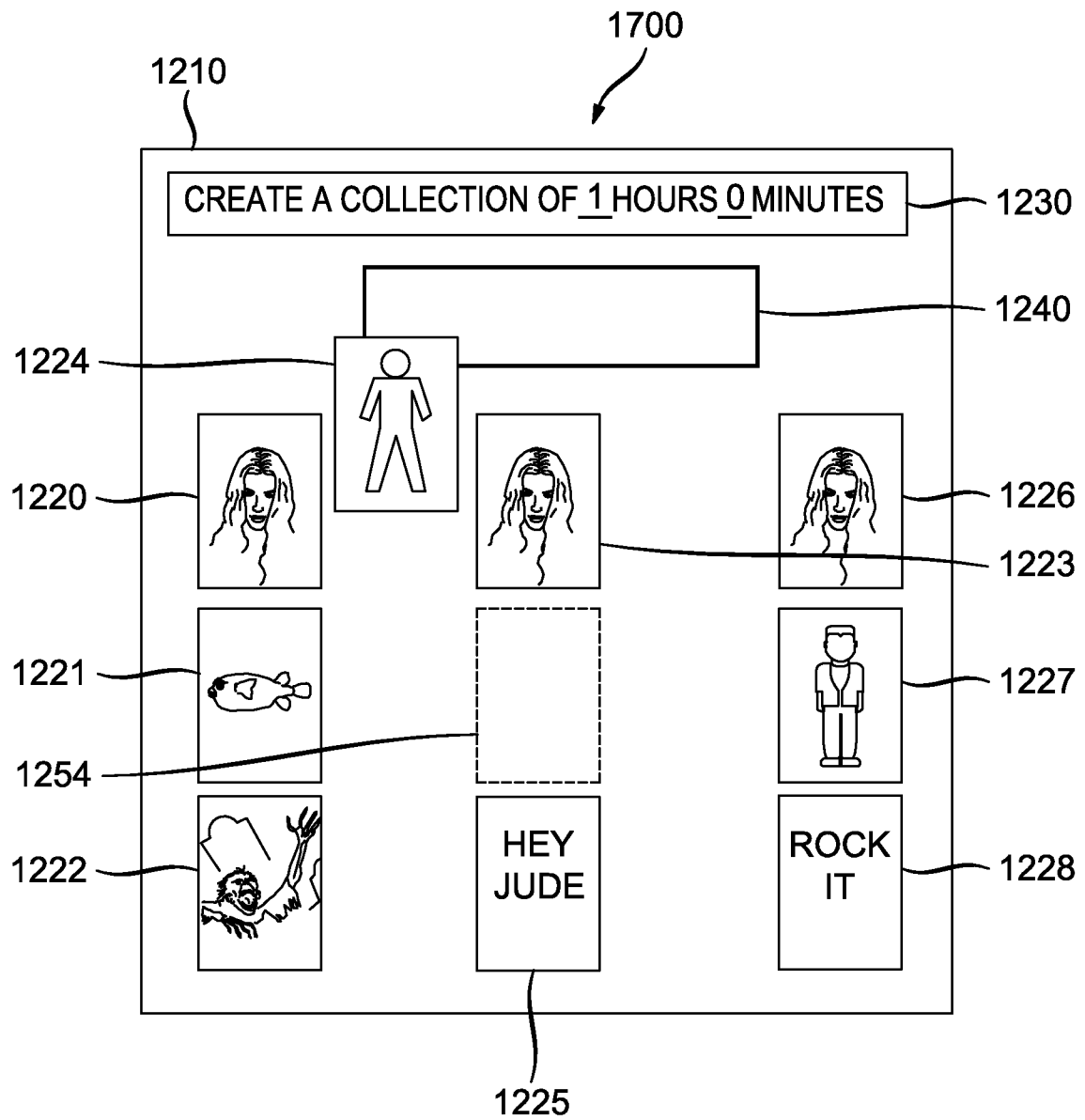


FIG. 17

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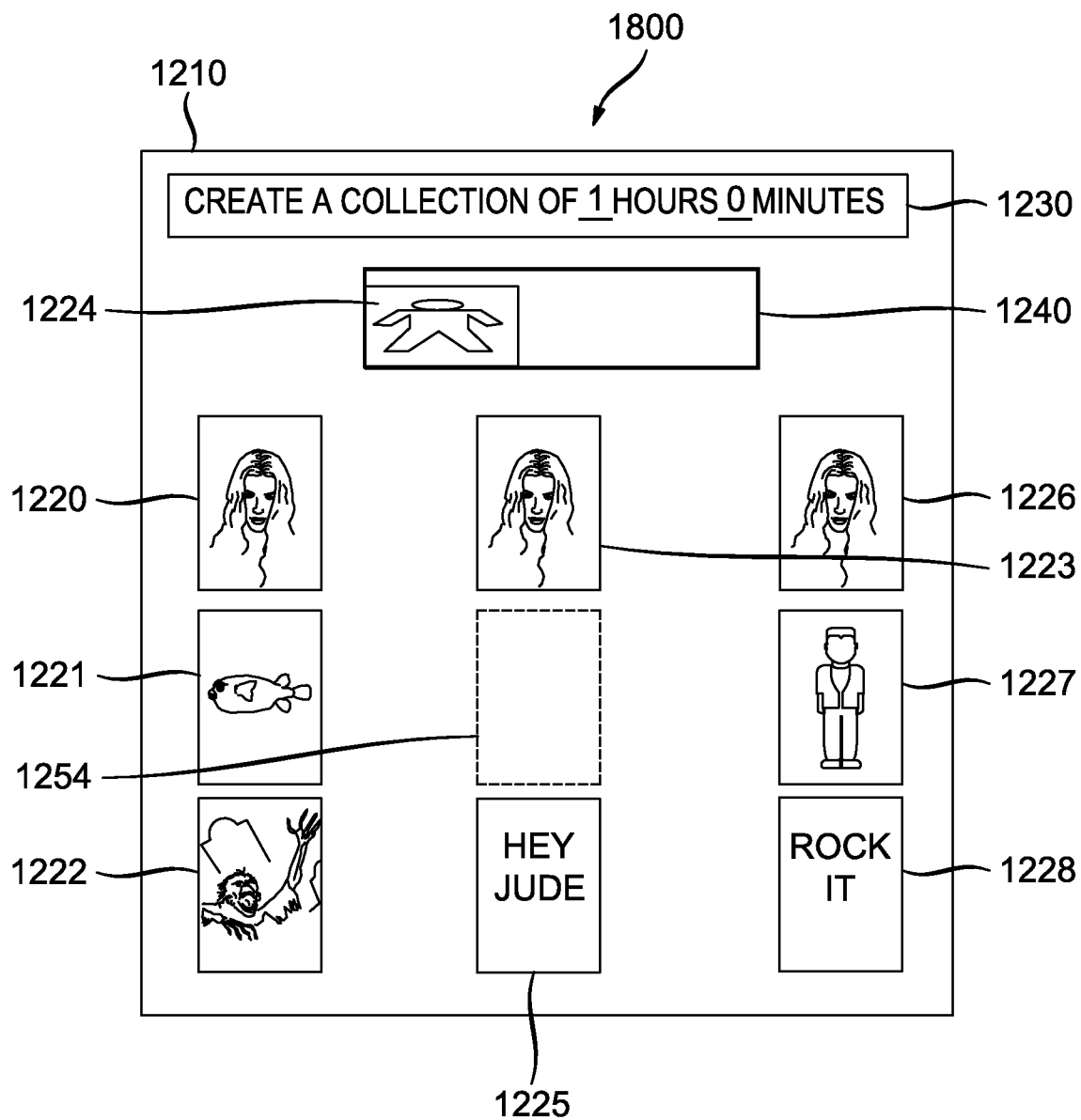


FIG. 18

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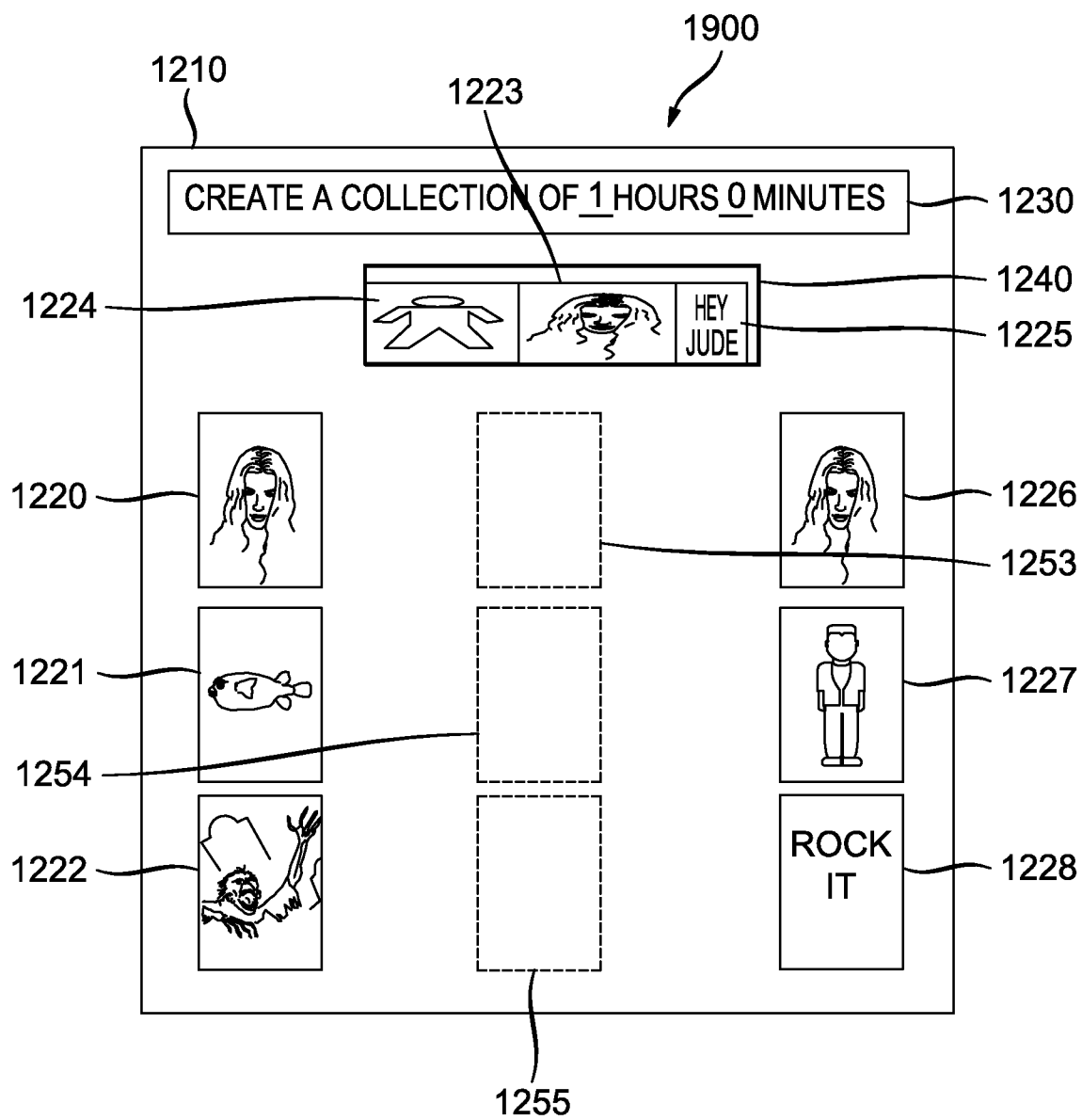


FIG. 19

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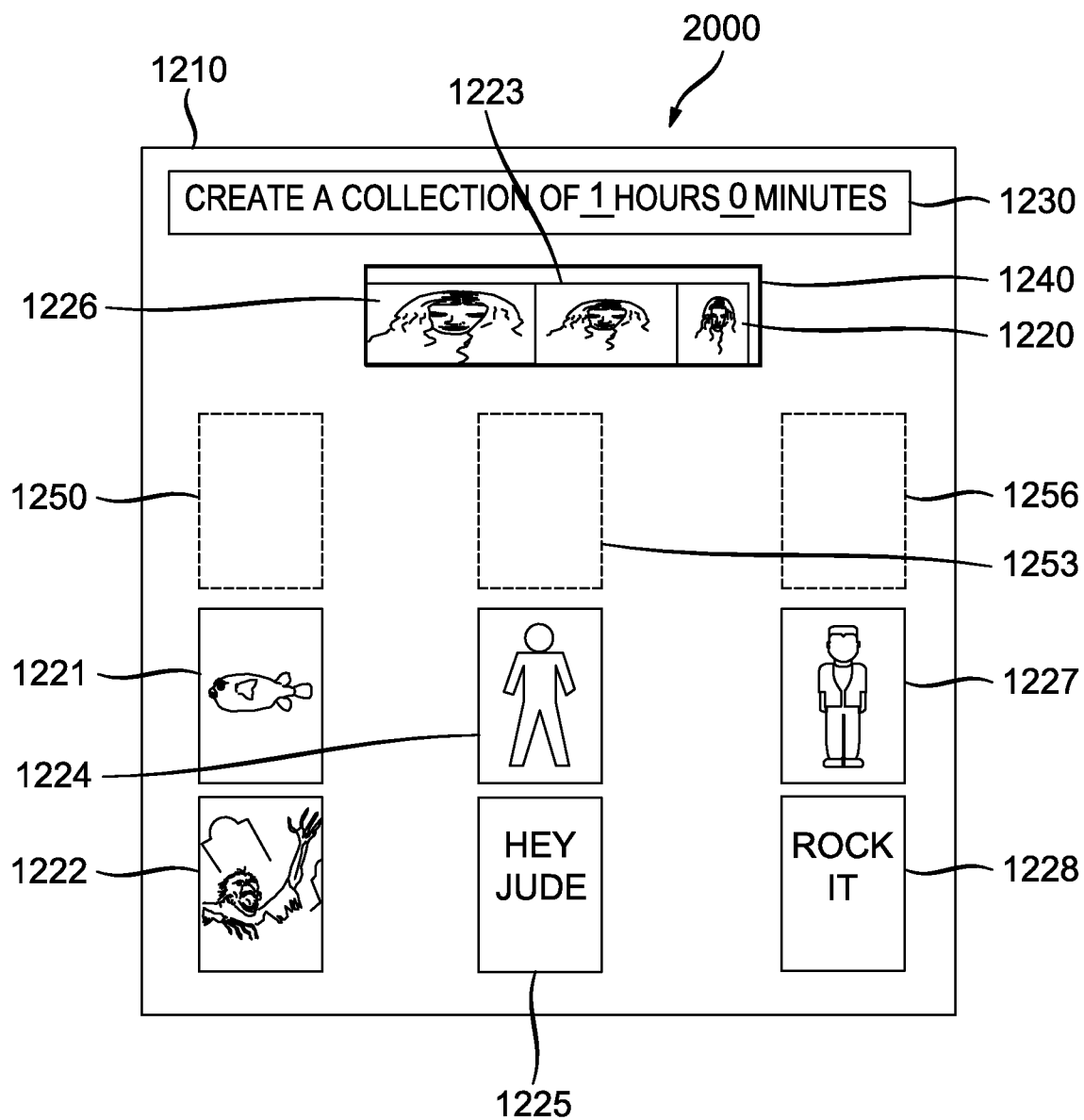
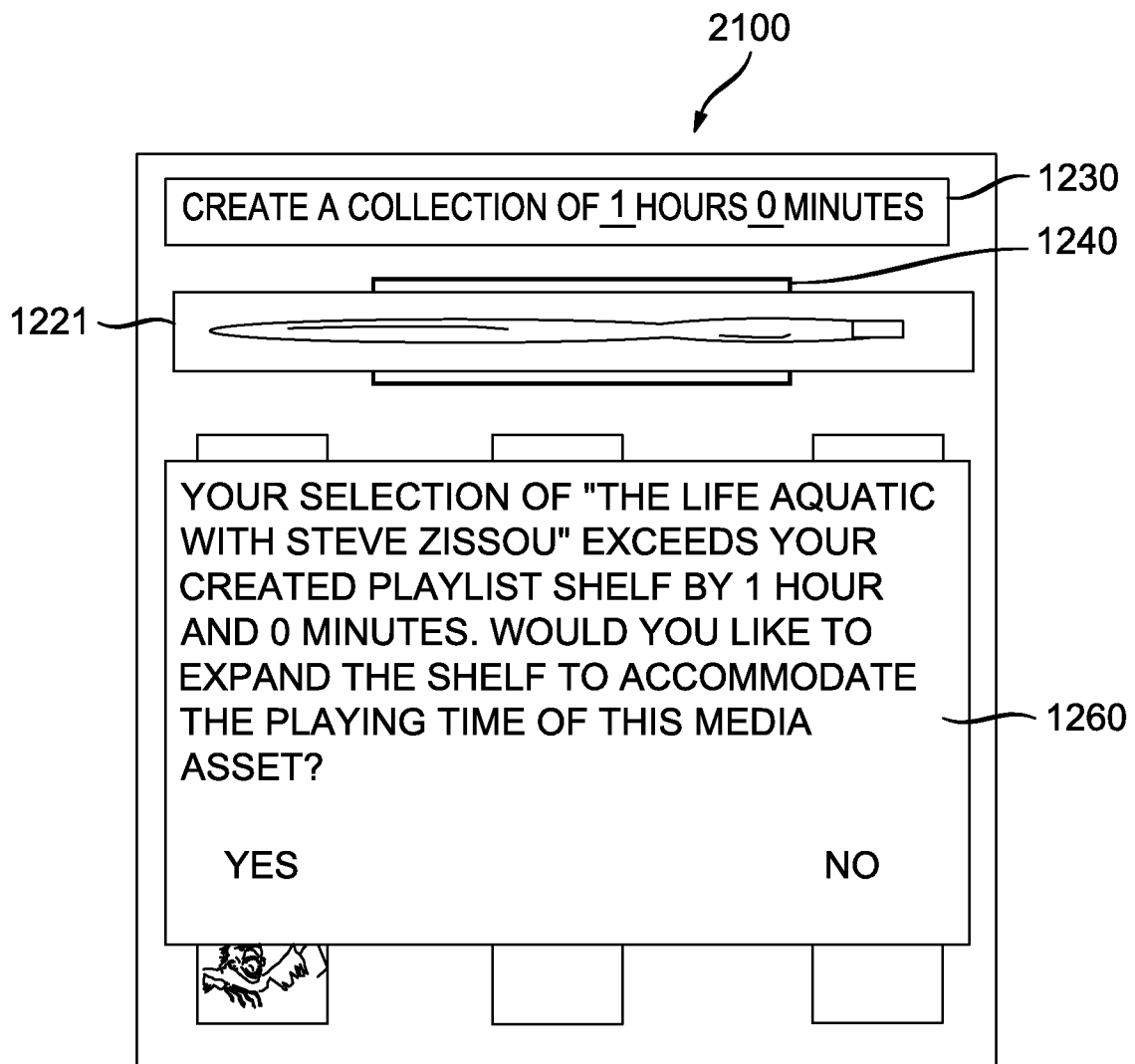


FIG. 20

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*FIG. 21*

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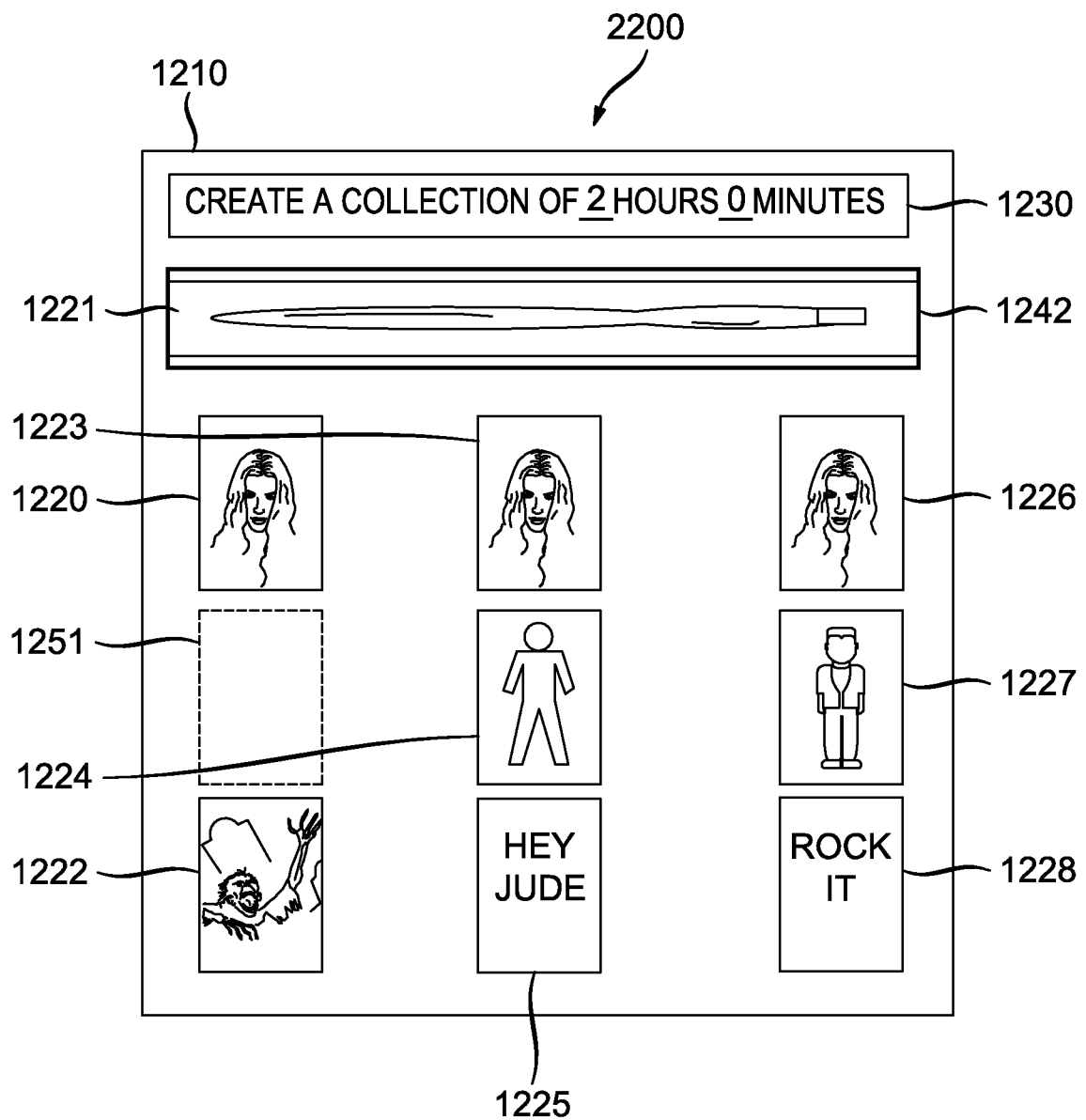


FIG. 22

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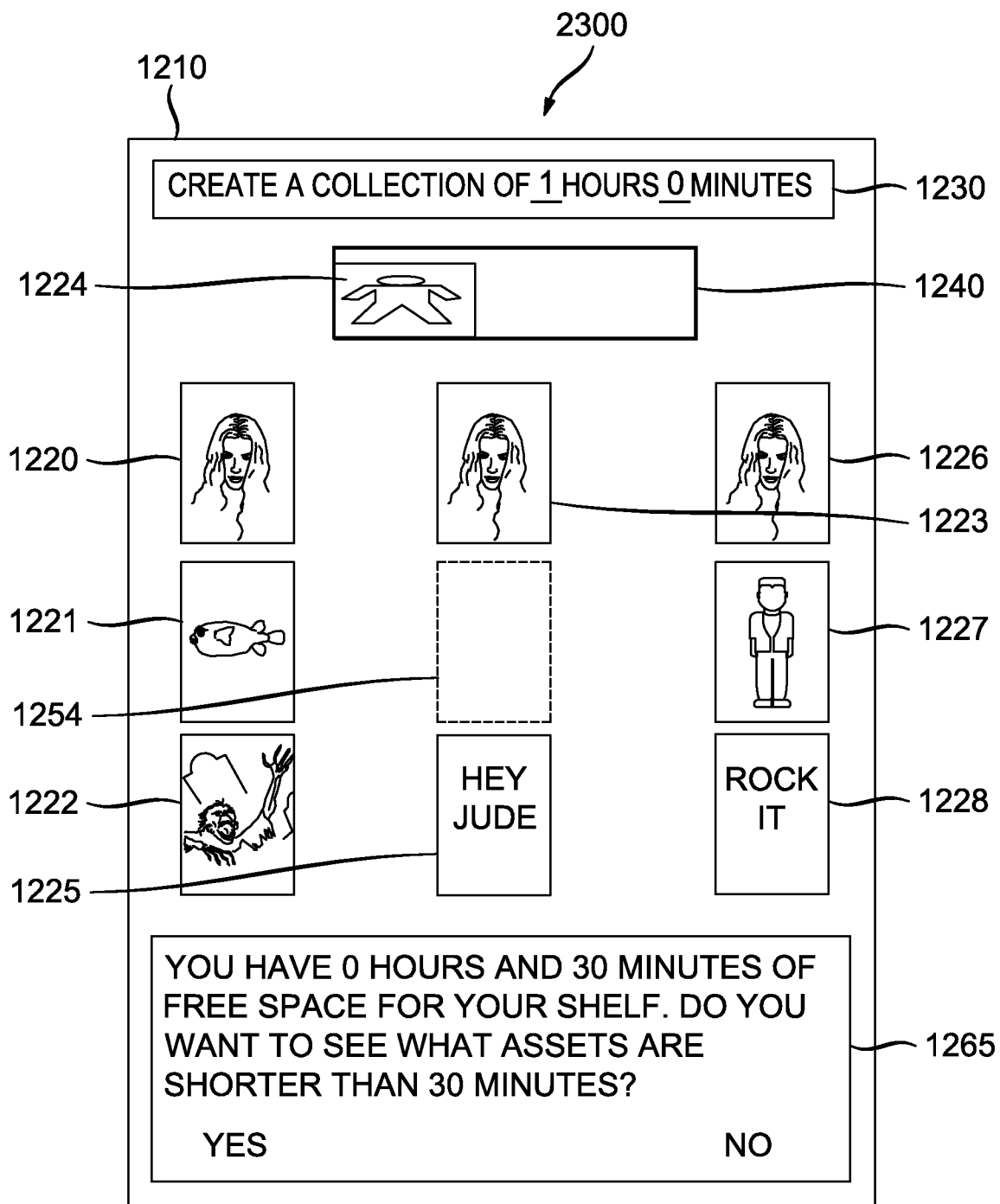


FIG. 23

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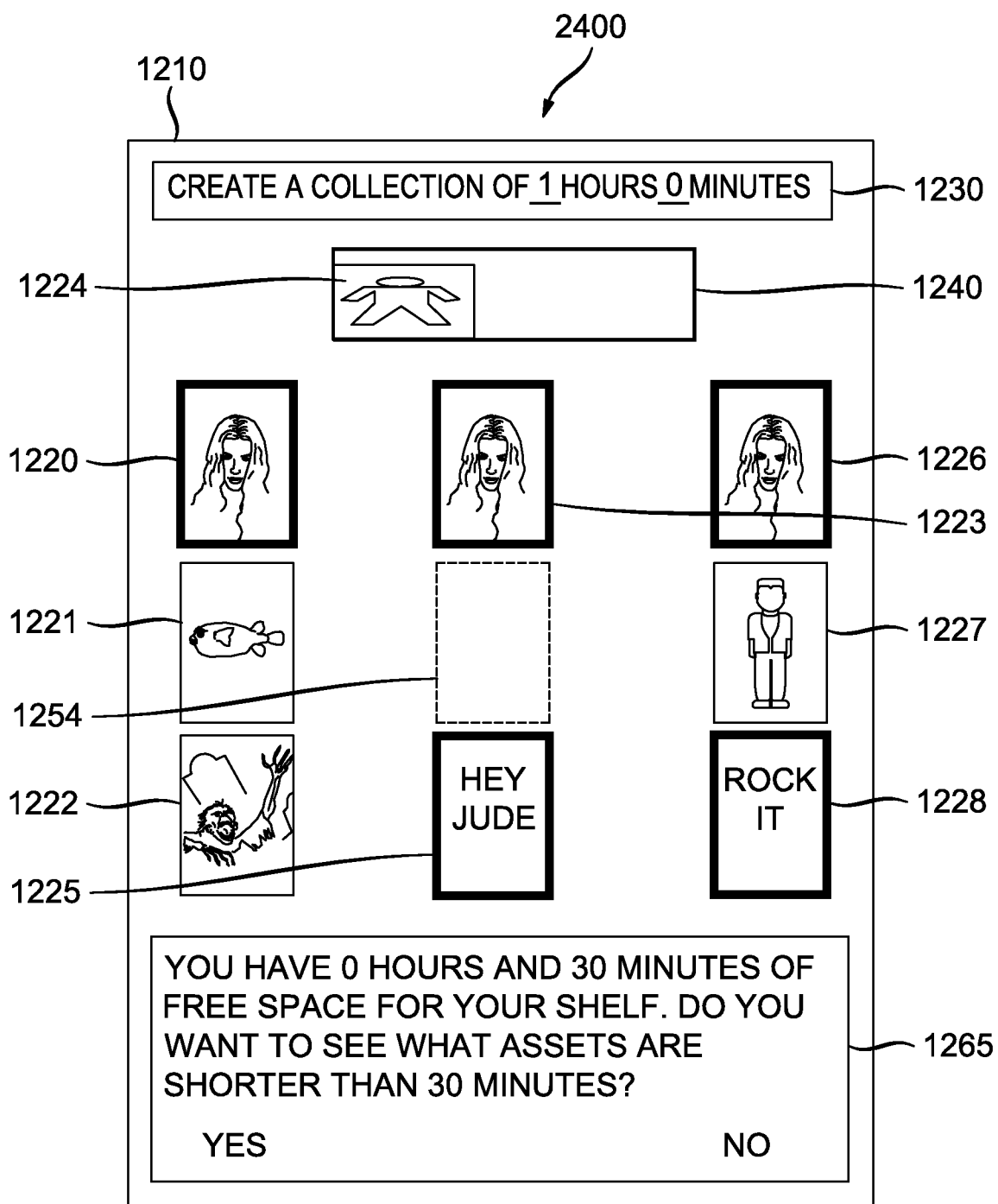
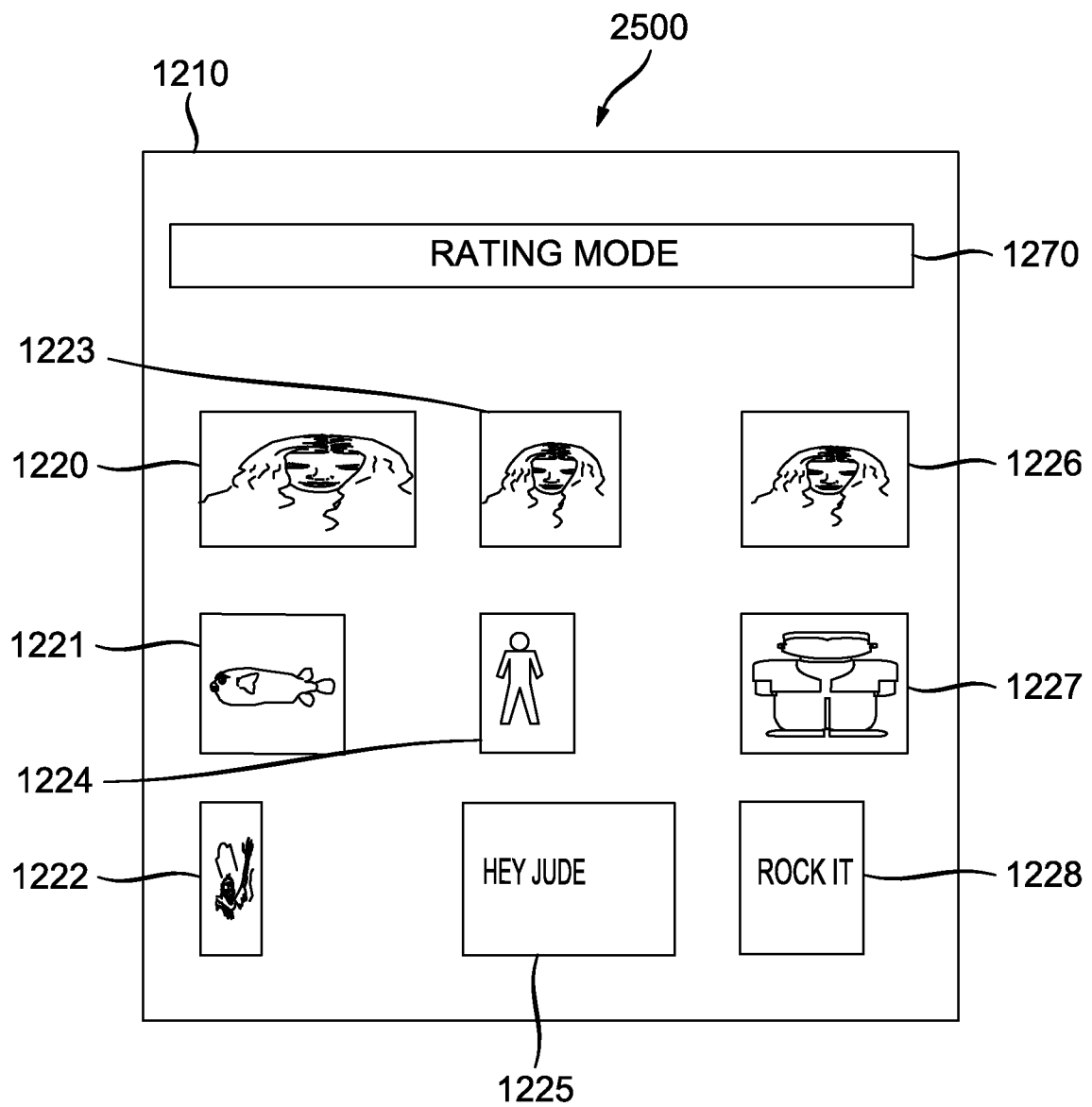


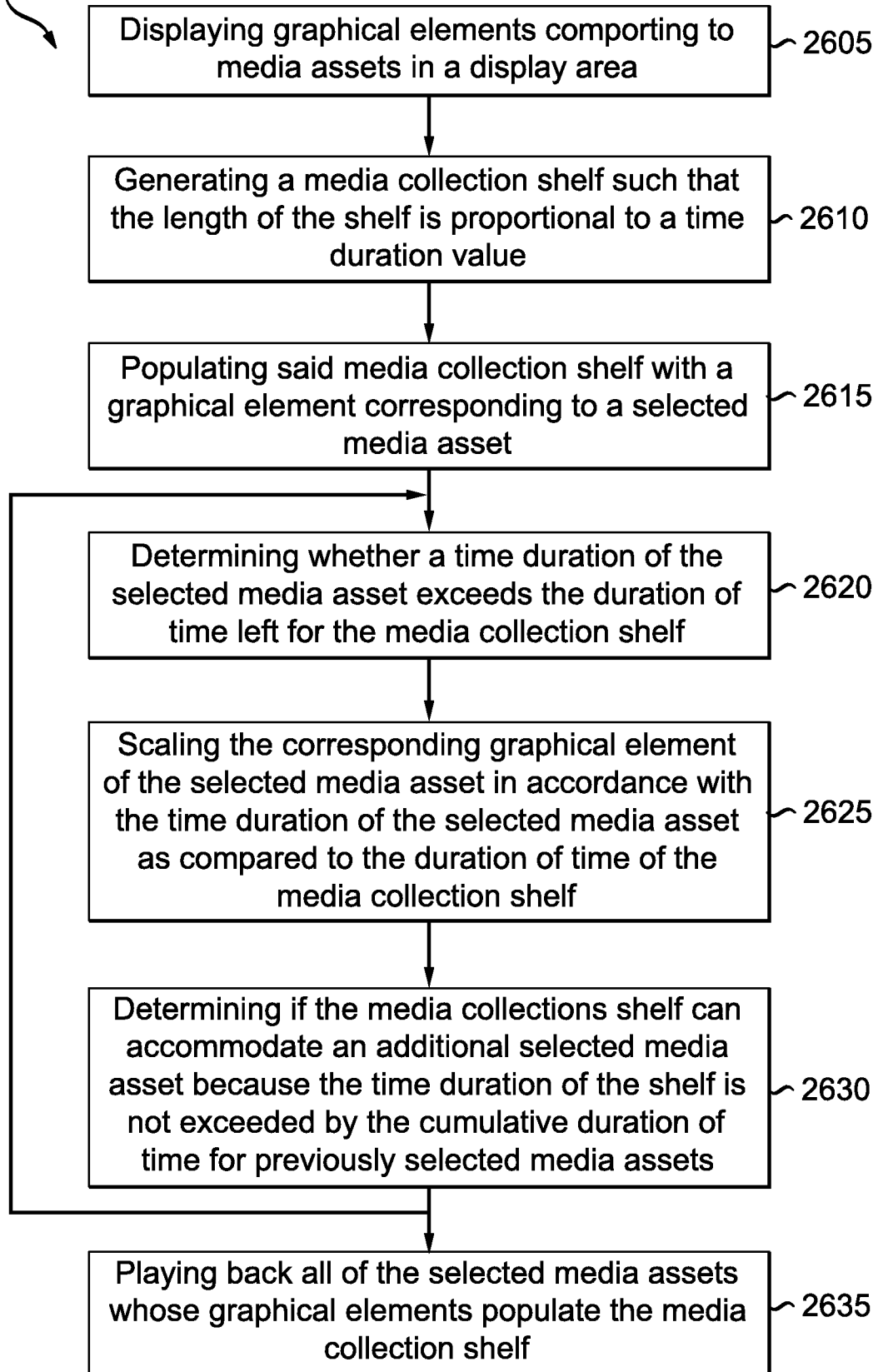
FIG. 24

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*FIG. 25*

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2600

*FIG. 26*

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/65999

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 3/048 (2012.01)

USPC - 715/825

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)
USPC:715/825Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 715/700,719,727,820,825,826,838 | 707/999.107 (keyword limited; terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Electronic Database Searched: PubWEST(PGPB, USPT, EPAB, JPAB), Google Scholar

Search Terms Used: plurality, multiple many collection, library, media, multimedia, video, song, track, album, movie, graphic, icon, symbol, element, picture, shelf, widget, bookshelf, playlist, play, list, ledge, bar, slab, interface graphic, element, length, width, si

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X		1, 6-12
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Y	US 2009/0070363 A1 (BULL et al.) 12 March 2009 (12.03.2009), see entire document; especially para [0006]-[0009], [0020], [0022]-[0024], [0048]-[0052], FIG. 1-2, 4-5, 7	2-5
Y	US 2006/0195789 A1 (ROGERS et al.) 31 August 2006 (31.08.2006), see para [0116], [0131], [0144], [0187]-[0189], [0196]-[0197], [0200], [0203], FIG. 76	2-5
A	US 2010/0274674 A1 (ROBERTS et al.) 28 October 2010 (28.10.2010), see entire document	1-12
A	US 2010/0131844 A1 (WOHLERT) 27 May 2010 (27.05.2010), see entire document	1-12
A	US 2008/0209468 A1 (MILOSEVSKI) 28 August 2008 (28.08.2008), see entire document	1-12
A	US 2008/0071827 A1 (HENGEL et al.) 20 March 2008 (20.03.2008), see entire document	1-12

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

* Special categories of cited documents:

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"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

08 April 2012 (08.04.2012)

Date of mailing of the international search report

24 APR 2012

Name and mailing address of the ISA/US

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