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(54) Title: METHOD AND SYSTEM FOR PROVIDING DYNAMIC ADVERTISING ON A SECOND SCREEN BASED ON SOCIAL MESSAGES

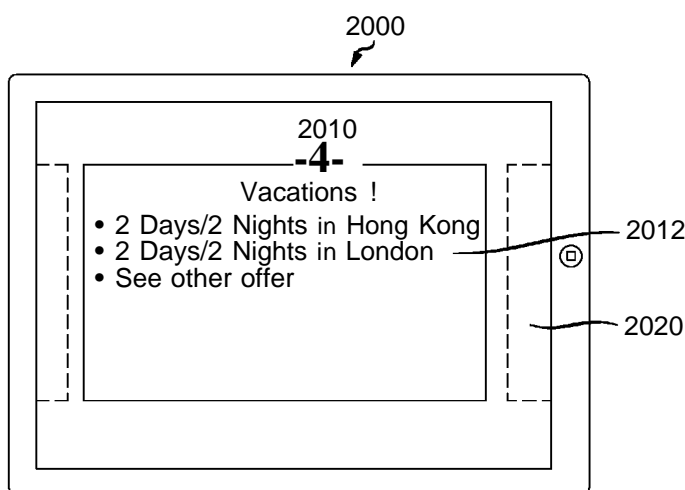


Fig. 20

(57) Abstract: The disclosed methods and devices make use of a second screen to provide dynamic advertising regarding content based on social media commentary. By tracking a user's social messages based on content being viewed, advertising relating to topics of their social messages can be presented in a timely and unobtrusive manner on a second screen device.

**METHOD AND SYSTEM FOR PROVIDING DYNAMIC ADVERTISING ON A
SECOND SCREEN BASED ON SOCIAL MESSAGES**

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CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application Serial No. 61/584,134 filed January 6, 2012 which is incorporated by reference herein in its entirety.

10 This application is also related to the applications entitled: "METHODS AND
AND SYSTEMS FOR SYNCHONIZING CONTENT ON A SECOND SCREEN", "METHOD
AND SYSTEM FOR PROVIDING A GRAPHICAL REPRESENTATION ON A
SECOND SCREEN OF SOCIAL MESSAGES RELATED TO CONTENT ON A FIRST
SCREEN", "METHOD AND SYSTEM FOR SYNCHING SOCIAL MESSAGES WITH
CONTENT TIMELINE", "METHOD AND SYSTEM FOR PROVIDING A DISPLAY
15 OF SOCIAL MESSAGES ON A SECOND SCREEN WHICH IS SYNCHED WITH
CONTENT ON A FIRST SCREEN", and "ALTERNATE VIEW PLAYBACK ON A
SECOND SCREEN" which have been filed concurrently and are incorporated by reference
herein in their entirety.

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Background

Technical Field

The present invention generally relates to providing additional content related to displayed content.

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Description of Related Art

A key to effective advertising is to deliver relevant offers at the right time. Current techniques involves extensive data collection on user behavior (e.g. Google tracking your searches, application use, viewing habits, etc.) which is then used to select advertisements that best suit the user's profile. A great deal of specificity can be derived using public and
30 private data to develop these personalization profiles.

Providing a focused context for collecting data has the potential for improving advertisement delivery even further. Social messaging may indeed be used as a source for personalization but may be handled independently from other activities that the user may be engaged in simultaneously. For example a user may tweet about a particular movie and a back-end system in the cloud can record the interest in that movie. This data could then be used the next time a user visits a website that takes advantage of this data to deliver advertisements. While this may potentially result in a higher advertisement relevance to the user during the subsequent visit the context of the original social message is lost.

Summary

The disclosed methods and devices make use a second screen to provide dynamic advertising regarding content based on social media commentary. By tracking a user's social messages based on content being viewed, advertising relating to topics of their social messages can be presented in a timely and unobtrusive manner on a second screen device.

In accordance with one embodiment, a method of providing advertising on a second screen that is synchronized with the content on the first screen based on social messages relating to content being displayed on the first screen is provided. The method includes the steps of monitoring social media for one or more messages relating to content being displayed on a first screen, processing the one or more messages to determine keywords for advertising, and providing advertising based on the keywords for display on the second screen.

In accordance with another embodiment, a second screen device capable of providing advertising that is synchronized with the content on a first screen based on social messages relating to content being displayed on the first screen is provided. The second screen device includes a screen, storage, and a processor. The screen is configured to display content. The storage is for storing data. The processor is configured monitor social media for one or more messages relating to content being displayed on a first screen, process the one or more messages to determine keywords for advertising, and provide advertising based on the keywords for display on the second screen

Brief Description of the Drawings

Figure 1 is a system diagram outlining the delivery of video and audio content to the home in accordance with one embodiment.

5 Figure 2 is system diagram showing further detail of a representative set top box receiver.

Figure 3 is a diagram depicting a touch panel control device in accordance with one embodiment.

Figure 4 is a diagram depicting some exemplary user interactions for use with a touch panel control device in accordance with one embodiment.

10 Figure 5 is system diagram depicting one embodiment of a system for implementing techniques of the present invention in accordance with one embodiment.

Figure 6 is a flow diagram depicting an exemplary process in accordance with one embodiment.

15 Figure 7 is a diagram depicting an exemplary methodology of synching between devices in accordance with one embodiment.

Figure 8 is a diagram depicting an exemplary methodology of synching between devices in accordance with one embodiment.

Figures 9A-9F are exemplary skeletal screen views depicting features in accordance with one embodiment when used in passive mode.

20 Figures 10A-10D are exemplary skeletal screen views depicting features in accordance with one embodiment when used in active mode.

Figures 11A-11C are exemplary skeletal views depicting a social media sharing feature in accordance with one embodiment.

25 Figures 12A and 12B are exemplary skeletal views depicting a content selection features in accordance with one embodiment.

Figures 13A-13E are exemplary skeletal views depicting additional features in accordance with one embodiment.

Figures 14A-14L are exemplary skinned screen views depicting how certain features could appear to a user.

30 Figure 15 is a exemplary skeletal view depicting social media features in accordance with one embodiment.

Figure 16 is a flow diagram depicting the functionality of social media features in accordance with one embodiment.

Figure 17 is an exemplary skinned screen view depicting social media features in accordance with one embodiment.

Figures 18 is a flow diagram providing a general methodology of providing content on a second screen based on social messages regarding content being displayed on a first screen in accordance with one embodiment.

Figure 19 is an exemplary view of a social quote event in accordance with one embodiment.

Figure 20 is an exemplary view of dynamic advertizing on a second screen based on social messages in accordance with one embodiment.

Figure 21 is an exemplary view of how a social message can be associated with content in accordance with one embodiment.

Figure 22 is flow diagram providing a methodology for generating a social message associated with content in accordance with one embodiment.

Figure 23 is flow diagram providing a methodology for processing a social message associated with content in accordance with one embodiment.

Figure 24 is flow diagram providing a methodology for providing a graphical representation of social messages associated with time periods of content in accordance with one embodiment.

Figure 25 is an exemplary representation of bins that make up a graphical representation of social messages associated with time periods of content in accordance with one embodiment.

Figure 26 is an exemplary representation of the association of messages to the bins that make up a graphical representation of social messages associated with time periods of content in accordance with one embodiment.

Figure 27 is a exemplary skeletal view depicting a graphical representation of social messages associated with time periods of content in accordance with one embodiment.

Figure 28 is an exemplary view of the operation of a graphical representation of social messages associated with time periods of content in accordance with one embodiment.

Figure 29 is another exemplary view of the operation of a graphical representation of social messages associated with time periods of content in accordance with another embodiment.

Figure 30 is another exemplary view of the operation of a graphical representation of social messages associated with time periods of content in accordance with another embodiment.

5 Figure 31 is another exemplary view of the operation of a graphical representation of social messages associated with time periods of content in accordance with another embodiment.

Figure 32 is another exemplary view of the operation of a graphical representation of social messages associated with time periods of content in accordance with another embodiment.

10 Figure 33 is a exemplary skinned screen view depicting a graphical representation of social messages associated with time periods of content in accordance with one embodiment.

Detailed Description

15 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 content is provided to the broadcast affiliate manager 104, which is typically a national
20 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
25 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 receiving device 108 in a user's home, where the content will subsequently be searched by the user. It is to be appreciated that the receiving device 108 can take many forms and may be embodied as a set top box/digital
30 video recorder (DVR), a gateway, a modem, etc. Further, the receiving 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 or additional content. Special or additional 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 receiving 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 additional content may be possible. In one possible approach, the additional content is provided as an augmentation to the broadcast content, providing alternative displays, purchase and merchandising options, enhancement material, etc. In another embodiment, the additional content may completely replace some programming content provided as broadcast content. Finally, the additional 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 additional content may be a library of movies that are not yet available as broadcast content.

The receiving device 108 may receive different types of content from one or both of delivery network 1 and delivery network 2. The receiving device 108 processes the content, and provides a separation of the content based on user preferences and commands. The receiving 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 receiving 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.

5 The receiving 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 receiving 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
10 is delivered to the display device 114. The touch screen control device 116 may interface to receiving 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. In some embodiments, the touch screen control device 116 can be
15 interfaced directly with delivery networks 1 and 2. Operations of touch screen control device 116 will be described in further detail below.

 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
20 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 stored. In some cases, the usage database 120 may be part of the back end server 118 a. 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).

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 Turning now to FIG. 2, a block diagram of an embodiment of a receiving device 200 is shown. Receiving device 200 may operate similar to the receiving device described in 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
30 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.

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 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 grid 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 grid 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. The database may be stored as a pattern of graphic elements. 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. 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.

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 touch panel device 300 may be interfaced via the user interface 216 and/or touch panel interface 222 of the receiving device 200, as shown in FIG. 3. 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 actuator or activator buttons. The touch panel 300 can also include at least one camera element. In some embodiments, the touch panel 300 may also include a microphone.

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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

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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."

Depending on the complexity of the sensor system, only simple one dimensional motions 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 and

used for volume up/down, while a vertical sensor for up and down movement may be placed in a different spot and used for channel up/down. In this way specific gesture mappings may be used.

5 The system and methodology can be implemented in any number of ways depending on the hardware and the content involved. Examples of such deployment include DVD, Blu-Ray disc (BD); streaming video or video on demand (VOD), and broadcast (satellite, cable, over the air). Each of these deployments would have different architectures but one could standardize the triggers for each of these events (the additional
10 content) that represents what would be queued by the application running on the second screen. For example, event A and event B would be triggered by a synchronizing mechanism associated with any of these sources of a video. When the tablet encounters "event A", the program running on the second screen device (e.g. tablet) will enact "event A". Similarly, if "event B" is encountered, the program running on the second screen device would do
15 "event B".

Figure 5 depicts a generic system 500 on which such methodology could be implemented. Here the system 500 includes a first screen device 510, a second screen device 520, a playback device 530, a network 540 and server 550. Each of these elements
20 will be discussed in more detail below.

The first screen device 510 is a display device, such as display device 114 described above in relation to Figure 1, for displaying content such as television programs, movies, and websites. Examples of such first screen display devices include, but are not limited to,
25 a television, monitor, projector, or the like. The first screen device 510 is connected to the playback device 530 which can provide the primary content to the first screen device 510 for display. Examples of such communication include, but are not limited to HDMI, VGA, Display port, USB, component, composite, radio frequency (RF), and infrared (IR), and the like. In certain embodiments, the first screen display device 510 may be connected to the
30 network 540, in either a wired or wireless (WiFi) manner, providing additional connection to the second screen device 520 and server 550. In some embodiments, the first display device 510 may include the functionality of the playback device 530. In still other embodiments, the first screen display device 510 may be in non-networked communication

560 with the second screen device 520. Examples of such non-networked communication 560 include, but are not limited to, RF, IR, Blue-Tooth, and other audio communication techniques and protocols.

5 The second screen device 520 is device capable of displaying additional content related to the primary content being displayed on the first screen device 510. The second screen device may be a touch screen control device 116 or touch screen device 300 as described above. Examples of second screen devices include, but are not limited to, a smart phone, tablet, laptop, personal media player (e.g. ipod), or the like. The second
10 screen device 520 is in communication with playback device 530 using either network 540, non-networked communication 560, or both. The second screen device 550 is also in communication with the server 550 via the network 540 for requesting and receiving additional content related to the primary content being displayed on the first screen device 510. In some embodiments, the second screen device 520 may be in networked or non-
15 networked communication 560 with the first screen device 510. Examples of such non-networked communication 560 include, but are not limited to, RF, IR, Blue-Tooth (BT), audio communication techniques and protocols, or the like.

 The playback device 530 is device capable of providing primary content for display
20 on the first screen device 510. Examples of such playback display devices include, but are not limited to, a DVD player, Blue-Ray Disc (BD) player, game console, receiver device (cable or satellite), Digital Video Recorder (DVR), streaming device, personal computer, or the like. The playback device 530 is connected to the first screen device 510 for providing the primary content to the first screen device 510 for display. Examples of such
25 connections include, but are not limited to HDMI, VGA, Display port, USB, component, composite, radio frequency (RF), and infrared (IR), and the like. The playback device 530 is also connected to the network 540, in either a wired or wireless (WiFi) manner, providing connection to the second screen device 520 and server 550. In some embodiments, the functionality of the playback device 530 may be included in the first
30 screen display device 510. In still other embodiments, the playback device 530 may be in non-networked communication 560 with the second screen device 520. Examples of such non-networked communication 560 include, but are not limited to, RF, IR, Blue-Tooth (BT), and other audio communication techniques and protocols.

The network 540 can be a wired or wireless communication network implemented using Ethernet, MoCA, and wireless protocols or a combination thereof. Examples of such a network include, but are not limited to, delivery network 1 (106) and delivery network 2 (112) discussed above.

The server 550 is a content server configured to provide additional content to the second screen device 520. In certain embodiments, the server may also provide the primary content for display on the first screen device 510. The service is connected to the network 540 and can communicate with any of the devices that are also connected. Examples of such a server include, but are not limited to, content source 102, broadcast affiliate manager 104, content manager 110, and the back end server described above.

Figure 6 depicts a flow diagram 600 for a methodology for displaying additional content related to primary content being viewed is disclosed. The method includes the following steps: Displaying primary content on a first screen device 510 (step 610). Providing, in association with the display of the primary content on the first screen, a synching mechanism to synch additional content (step 620). Displaying, on a second screen device 520, additional content related to the primary content on the first screen 510 that is synched to the content displayed on the first screen device according to the synching mechanism (step 630). In certain embodiments, the method also includes the steps of receiving commands from the second screen device 520 to control the display of primary content on the first screen device 510 (step 640) and controlling the display of the primary content on the first screen device 510 based on the commands received from the second screen device 520 (step 650). Each of these steps will be described in more detail below.

The step of displaying primary content (step 610), such as a movie or television show, is performed on the first screen device 510. This involves the primary content being provided to the first screen display 510. The primary content can be provided by the playback device 530 or be received directly from a content provider at the first screen display device 510. The primary content is then shown or otherwise displayed on the first screen device 510. The display of the primary content also includes the control of the content being displayed. This can include the traditional playback commands of play, stop,

pause, rewind, and fast forward as well as the navigation of on screen menus to select the content and other playback options. In certain embodiments, the display on the first screen device 510 (step 620) further includes displaying an indicator of the type of additional content being displayed on the second screen device 520.

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The provided synching mechanism (step 620) can be implemented in a number of ways. In certain embodiments the synching mechanism is performed by an application running on the second screen device 520, the playback mechanism 530, the first screen device 510 or any combination thereof. At its most basic, the second screen device 520 is configured (via an application) to detect synching signals, cues, or other type of indicators that directs the second screen device 520 to update the display of additional content to coincide with the primary content being displayed on the first screen 510. The synching signals, cues or other type of indicators, can be provided as part of the primary content or can be generated by the playback device 530 of first screen device 510 (via an application) in accordance with the chapter, scene, time-code, subject matter, or content being displayed. The synching signals, cues or other type of indicators can be transmitted to the second screen device 520 using the network, in either a wired or wireless (WiFi) manner, or using non-networked communication 560 such as audio signals. Examples of some of the implementations are given below. Other possible implementations will be apparent given the benefit of this disclosure.

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The step of displaying the additional content, such as supplemental materials, video clips, websites, and the like (step 630) is performed on the second screen device 520. The additional content can be stored locally on the second screen device 520 or be provided by the server 550, playback device 530, or first screen device 510. The display of the additional content is synched to the primary content being displayed on the first screen device 510 according to the synching mechanism. For example, when the second screen device 520 detects a synching signal, cue or other type of indicator, the second screen device 520 updates the display of the additional content accordingly. In some embodiments, this further involves contacting and requesting the additional content from the server 550, playback device 530, or first screen device 510 and subsequently downloading and displaying the additional content. In some embodiments, the additional

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content to be displayed can be selected, modified, or omitted based on the user using the system.

In certain embodiments, the display on the second screen device 520 (step 630) further includes displaying the status of the display of the primary content on the first screen device 510 such as whether the display of the primary content on the first screen device 510 has been paused. In certain other embodiments, the display on the second screen device 520 (step 630) further includes displaying the status of the synch between the additional content on the second screen device 520 and the primary content on the first screen device 510.

In certain embodiments, the second screen device 520 is capable of transmitting as well as receiving. The optional steps 640 and 650 address this capability. In step 640 commands are received from the second screen device 520. Ideally, these commands are received at the device controlling the playback of the primary content on the first screen device 510. In certain embodiment, the playback device 530 is the device receiving the commands. The commands can be sent via the network 540 or non-networked communication 560. Once received, the commands can control the display of the primary content (step 650). Examples of such control include, but are not limited to, play, stop, pause, rewind, fast-forward, as well as chapter, scene, and selection. These commands can also be used to synch the primary content displayed on the first screen device 510 with the additional content being displayed on the second screen device 520.

Figure 7 provides a high level overview of one example of system 700 with a synching mechanism implemented using a non-networked communication 560. In this system 700, the non-networked communication synching mechanism is audio watermarking 710. In this example, audio watermarking 710 involves inserting a high-frequency signal, cue, or other indicator into the audio signal of the primary content being displayed on the first screen device 510. The audio watermark is inaudible to humans but can be detected by a microphone in the second screen device 520. When the second screen device 520 detects an audio watermark, the displayed additional content is updated to synch with the primary content being displayed on the first screen device 510 based on the detected watermark. The audio watermarks can be incorporated into the primary content at

the source of the content or inserted locally by the playback device 520 or first screen device 510.

Figure 8 provides a high-level overview of one example of a system 800 with a
5 synching mechanism implemented using the network 540. In this system 800 the synching mechanism is wireless communication (WiFi) 810 between a playback device 530 (a Blu-Ray Disc player) and the second screen device 520 (an iOS device running an application). In the example of Figure 7, the features and protocols of a BD-Live enabled device are used. There are two main components of this protocol: connection and communication.
10 Both are described below. For simplicity the second screen iOS application will be referred to as the "iPad" and the BD-Live enabled device will be referred to as the "disc".

Connection occurs when an iOS enabled device 520 first launches the second screen application and attempts to connect to a BD-Live enabled device 530 on the same
15 Wi-Fi network 540.

1. Disc is inserted into BD player
2. Disc enters UDP 'listening' loop
3. iPad launches second screen application
4. iPad performs UDP broadcast of authentication token
- 20 5. Disc receives authentication token and authenticates
6. Disc retrieves IP from tokens sender (iPad's IP)
7. Disc responds to authentication with its IP and PORT
8. iPad confirms IP and PORT
9. iPad closes UDP socket communication
- 25 10. iPad establishes direct TCP socket communication with disc based on IP and PORT provided.

Communication occurs after a connection has been established between the second screen iOS application and a BD-Live enabled device.

- 30 1. iPad and Disc are aware of each other's IP's as well as what PORT communication should occur using
2. TCP socket communication is maintained for the duration of the applications lifecycle.

One advantage of such a wireless communication as seen in this example is that it is bi-directional allowing the second screen device to transmit as well as receive commands. This allows for two way synching as well as control of playback from the second screen device 520.

5

In certain embodiments, the application of the second screen device 520 could be specific to a specific program or movie on a specific system (e.g. BD). In other embodiments, the second screen application could be generic to a studio with available plug-ins to configure the application to a particular program or movie. In still other
10 embodiments the second screen application could be universal to system (BD, VOD, broadcast), content, or both. Other possible implementations and configurations will be apparent to one skilled in the art given the benefit of this disclosure.

The system can be operated in with a passive approach or an interactive approach.
15 In the passive approach icons displayed on first screen device 510 prompt the user to look at the second screen device 520 for an additional content event being displayed that is related to the primary content displayed on the first screen device 510. The icon preferably indicates what type of additional content event is available on the second screen device 520 (e.g., a shopping cart icon indicates a purchase event, an "I" icon indicates an information
20 event, a stickman icon indicates a character information event, etc.) Figure 9A-F depicts some of the aspects that may be displayed to the user in passive mode.

Figures 9A-F depict skeletal examples of what may be displayed on the screen 900 of the second screen device to a user when using an application in passive mode that
25 provides additional content on the second screen device 520 that is synched with the primary content on the first screen device 510.

Figure 9A depicts a splash screen that may be displayed to the user when the application is launched. It includes the product logo and indication of the primary content
30 902. Here new content screens transition in from right in a conveyer-belt like manner as indicate by arrow 904.

Figure 9B depicts a pop-up message 906 that is displayed to a user when no playback device 530 is detected by second screen device 520.

The screen 900 of Figure 9C shows a synch button/icon 908, chapter timeline 910, active chapter indicator 912, chapter-event indicator 914, chapter number indicator 916, event timeline 918, chapter background 920, event card 922, and timeline view icons 924.

5 The synch button 908 provides a mechanism to synch the content between the first and second screen devices 510, 520. The synch button 908 may also indicate the status of the synch between the content on the first and second screen devices 510, 520. The chapter timeline 910 indicates the chapters of the primary content. The movie title leader is in the background of the chapter timeline 910 and indicates the primary content. As the primary

10 content progresses the chapters move along chapter timeline in a conveyer-belt life fashion with the active chapter indicator 912 indicating the current chapter in the primary content via highlight and center position of the chapter timeline 912. The chapter-event indicator 914 indicates that events displayed in the event timeline 918 are part of the active chapter shown in the chapter timeline 910. The event timeline 918 displays event cards 922

15 indicating events that correspond to what is transpiring in the current chapter of the primary content. For each chapter, the first displayed event card 922 indicates the chapter that the following events occur in. As the primary content progresses the event cards 922 move along event timeline 918 in a conveyer-belt like fashion with the current event in the center position of the event timeline 918. Each chapter may be provided with a unique

20 background 920 for the events of that particular chapter. The timeline view icon/button 924 indicates that the viewer is in timeline view showing the chapter timeline 910 and event timeline 918 as well as provides a mechanism to access the timeline view.

The screens 900 of Figure 9D and 9E depict how event cards 922 progress across

25 the event timeline 918. Here the synch button/icon 908 indicates that the timeline view of the additional content is in synch with the primary content on the first screen device 510. In figure 9D, the current triggered event card 926 is shown in the center position of the event timeline 918 and represents the first triggered event. To the left of the current triggered event card 926 in the event timeline 918 is the previous event card 928, in this

30 case the card indicating the chapter. To the right of the current triggered event card 926 in the event timeline 918 is the next event card 930, in this case the card indicating the next scheduled event. Since, in Figure 9D, this is the current triggered event card 926 is for the first triggered event, the chapter indicator 916 indicates that it is chapter 1. The current

triggered event card 926 includes the additional content 932 related to the primary content. The current triggered event card 926 also provides an indicator 934 as to what type of additional content is displayed. In certain embodiments this indicator matches an indicator shown on the first screen display 510. The current event card 926 also includes

5 buttons/icons for synching 936 and sharing 938. The synch button/icon 936 provides a mechanism that causes the primary content displayed on the first screen device 520 to be synched with the current event. The share button/icon 938 provides a mechanism to share the additional content of the event with a social network. The elements of the screen 900 of Figure 9E are similar to the elements of Figure 9D except that the current triggered event

10 card 926 is for an event that happens later in the timeline as indicated by the chapter indicator 916 which indicates the current chapter is chapter 3.

Figure 9F depicts examples of other possible functionality that may be provided as part of display on the second screen device 920. Here the chapter timeline 910 is provided

15 with a collapse icon/button 940 which provides a mechanism to toggle the chapter timeline between visible 940a and hidden 940b. Likewise the synch button/icon 908 can toggle between status indicating whether synch is currently active 908a and status indicating synch has been lost and re-synching is available 908b. In some embodiments a volume button icon 942 is provided. The volume button/icon 942 provides a mechanism to turn the

20 sound of the first screen display "OFF" or "ON". The volume button 942 may also indicate the status of whether the volume is "ON" indicating muting is available 942a, or "OFF" indicating sound is available 942b. In some other embodiments a play/pause button/ icon 944 is provided. The play/pause button 944 provides a mechanism to pause or resume playback of content on the first screen display 510. The pause/play button may

25 also indicate the status of whether the playback can be paused 944a, or "or resumed 944b.

In the interactive approach, the user selects an additional content event on the second screen device 520 and what is displayed on the primary screen device 510 is synched to the selected event. As indicated previously, the events of additional content are

30 synched to the primary content. If the user swipes the movie timeline or the events, the events become out of synch with the movie being shown on the main screen. To re-synch touches the synch button on the tablet. The timeline or events are the synched back to what is being displayed on the main screen. Likewise, a user can select a trivia event or map

event, touch the synch button, and the scene in the movie related to the selected trivia or map event will be played on the main screen. Examples of this can be seen in Figure 10A-D.

5 Figure 10A depicts how a user may interact with the chapter timeline 910 and event timeline 918 on the screen 900. Here icons 1000 and 1002 represent how the user can touch the screen to scroll left or right in the chapter or event timelines 910, 918.

10 Figure 10B depicts one embodiment of the screen 900 when a user interacts with the chapter timeline 910. In this example the synch button/icon 908 indicates that the additional content on the second screen display 520 is out of synch with the primary content on the first screen display 510. Icon 1000 represents the user scrolling through the chapter timeline 910. The current chapter remains highlighted 912 until the transition to the new chapter is completed. When navigating through the chapter timeline 910 a chapter position indicator 1004 is provided that indicates what chapter of the available chapters is selected. The chapter indicator 916 also indicates the selected chapter and updates when the transition to the new chapter is complete. In this example, while the user is navigating through the chapter timeline 910, the event timeline 918 is dimmed. In certain embodiments, the user may jump directly to a particular chapter by selecting the chapter from the timeline 910.

20 Figure 10C depicts one embodiment of the screen 900 when a user interacts with the event timeline 918. Icon 1002 represents the user scrolling through the event timeline 918. Here, the timeline 918 is being transitioned from current triggered event card 926 to the next event card 930. When navigating through the event timeline 918 an event position indicator 1004 is provided that indicates what event of the available events is selected.

30 Figure 10D depicts one embodiment of the screen 900 when a user interacting with the event timeline 918 causes a transition from one chapter to another. Icon 1002 represents the user scrolling through the event timeline 910 causing a chapter change. Here, the timeline 918 is being transitioned a new event card 922 indicating a new set of events related to a new chapter. When navigating through the event timeline 918 causes a

transition to a new chapter the event position indicator 1004 is centered until the new series of events begins.

Figure 11A-C and 12A-B indicate some of the other interactive activities that can be accessed via the event cards 922. Figures 11A-C depict the social media sharing feature. Figures 12A-B depict the chapter selection as well as selection and playback of additional media files.

Figure 11A-C shows various pop-up fields on the display 900 when the sharing feature is active via the share button/icon 937. Figure 11A shows the field 1100 displayed when the user has logged into their social network (in this case Facebook). Area 1102 indicates the event being shared and area 1104 indicates the comments the user is going to share about the event. Button 1106 provides the mechanism to submit the event and comments to be shared. Figure 11B shows the field 1100 displayed when the user has not yet signed in to the social network. In this example button 1108 is provided to sign into Facebook and button 1110 is provided to sign into twitter. Options to sign into other social networks may also be provided. Figure 11C shows an onscreen Qwerty keyboard 1112 that may be used to enter comments into area 1104 for user's comments. In certain embodiments, this may be a default keyboard provided by the second screen device 520.

Figure 12A-B shows the selection of chapters as well media content for playback by the user. In the example of 12A, if the user single taps 1200 the currently playing chapter shown in the chapter timeline 912 the playback on the first screen device 510 is paused. If the user double taps 1202 the currently playing chapter shown in the chapter timeline, playback of on the first screen device will jump to the beginning of the chapter and the events timeline 918 will be set to the first event of that chapter. In some embodiments, the event cards 922 may include media files 1204 such as video or audio clips. If the media file is an audio clip, then selection of the audio clip results in playback on the current screen 900. If the media file is a video clip, then selection of the video clip results in the launching of a full-screen media player 1206 as seen in Figure 12B. In this example the media player includes on-screen controls 1208. To return to the previous screen, the user only needs to tap the non-video surface 1210 of the media player.

Figure 13A-E depicts some other possible features regarding the additional content. These include a map view 1300, family tree 1310, and settings 1320. Figure 13A depicts the menu bars for these options. In this example each of these menu bars are provided with first screen device controls 1330 including pause/resume and mute/un-mute. Figure 13B depicts the map view display 1300. The map view display 1300 includes a map 1302 including marked locations 1304 and information about the locations 1306. Icons are also provided to select other maps 1308. Figure 13C depicts the family tree view 1310. The family tree view shows the family tree with fields 1312 indicating the relationship between the family members. In this example the button/icon 1314 at the bottom indicates what view is currently being shown (i.e. the family tree view). If a field 1312 is selected, a pop-up field 1316 is displayed, as shown in Figure 13D, providing information about the person in the field 1312. Figure 13E depicts the settings view 1320. In view 1320 the user is provided with controls for adjusting the preferences for the audio and video 1322, events 1324, and social network sharing 1326.

Figures 14A-L depict skinned examples of what may be displayed on the screen 900 of the second screen device to a user when using an application that provides additional content on the second screen device 520 that is synched with the primary content on the first screen device 510. Figure 14A is a skinned version of the splash screen as shown and described in relation to Figure 9A. Figures 14B-F depict skinned versions of the timeline view as seen and described in relation to figures 9C-F and 10A-D. Figure 14G depicts a skinned version of a screen display wherein all the available video clips that are part of the additional content are displayed for the user. Figure 14H depicts a skinned version of a screen display wherein all the available audio clips that are part of the additional content are displayed for the user. Figure 14I depicts a skinned version of the maps view as shown and described in relation to Figures 13B. Figures 14J and 14K depict skinned version of the family tree view as shown and described in relation to Figure 13C and 13D respectively. Figure 14L depicts a skinned version of the settings view as shown and described in relation to Figure 13E.

The events and features shown in the figures are just some examples of possible events. In certain embodiments, a user may be able to configure or otherwise select what events they wish to be shown (e.g., don't show me purchase events). In other embodiments

the user may be able to select or bookmark events for viewing at a later time. In still other embodiments certain events may be unavailable or locked out depending on the version of the program being viewed (i.e. purchased vs. rented or BD vs. VOD vs. Broadcast). In other embodiments, the events available can be personalized for a user based on previous viewing habits (i.e. in system such as TIVO where a user's viewing habits are tracked or using the personalization engine 118 of Figure 1).

Other possible configurations include shopping features. For example, a store front could be provided and accessible from the second screen to for purchasing movie merchandise. In another embodiment points or awards could be provided to a user for watching, reviewing, or recommending a program or film. For example, the more movies watched or shared with friends, the more points awarded. The points can then be used for prizes or discounts on related goods.

Similarly, achievements can also be awarded. These achievements could be pushed to a social networking site. Example achievements could include:

Watching certain scenes - Achievement

Watching certain discs in a series - Achievement

Watching certain discs by a particular studio or actor - Achievement

In still other implementations a Wiki feature could be implemented. A running Wiki could let a user and other users of a disc comment on certain scene. For example, tracking metadata could be created which is pushed to a web based wiki. Such metadata could include:

Chapter Information

Time Codes

Thumbnails of Scenes

Actor/Director Information

This pushed information can be used to create a running Wiki which lets others comment on the movie. These comments could then be reintegrated into the second screen application as events which can be accessed.

Additional features and screens are also possible. For example, in some embodiments activity on one or more social networks that is related to content displayed on the first screen can be monitored and used to provide additional content on the second screen.

5

As discussed in regard to Figure 11A-C. The application on the second screen device 520 can support social media such as Facebook and Twitter. Additional examples of this can be seen in Figures 15-17.

10 Figure 15 depict a wireframe screenshot 1500 showing the panel 1510 displayed over the background, in this case a "greyed-out" or "dimmed" timeline view 1520, when the user has not yet signed in to the social network. In this example panel 1510 is for signing into twitter. The panel 1510 provides an area 1512 to provide a username or email address as well as an area 1512 to provide a password. Button 1516 authorized the
15 application to access twitter. Button 1518 declines the sign-in. A similar panel or field can be provided to sign into Facebook, or other social media networks.

Figure 16 depict a flow diagram 1600 of the screens displayed to a user based on whether they are signed into a social network. At junction 160 it is determined is the user
20 it signed in or otherwise authorized on the social network. If the user has not provided authorization (1612) screen 1500 with panel 1510 of figure 15 is displayed to the user prompting them to sign in. If the user has previously provided authorization (1614) or signs in using screen 1500 (1618) screen 1620 with message panel 1622 is displayed. From the message panel 1622 the user may cancel or send a message using buttons 1624
25 and 1626 respectively. The text of the message can be entered using an onscreen keyboard 1628. Once a message is sent or canceled out of (1630) or if authorization is never provided (1632) junction 1634 is arrived at wherein the panels are dismissed and the user is returned to the previous screen view (1640).

30 Figure 17 depicts a skinned version screen 1700 of the screen 1620 of Figure 16. A message panel 1710 is provided overtop the skinned background 1720. The message panel 1710 includes a text area 1712 as well as cancel 1714 and send 1716 buttons. Text can be entered into the text area 1712 using an onscreen keyboard 1730.

In addition to providing the ability to post social messages from the application on the second screen device 520, the user's experience can further be enhance being able to track comments on social media relating to content being viewed on the first screen device 510 and providing additional content on the second screen device 520 that is synched to the primary content on the first screen device 510 based on the tracked comments relating to the primary content.

Figure 18 shows a flow diagram 1800 depicting one possible methodology for providing such functionality on a second screen device 520. At a basic level, the method includes three steps. First, social media activity regarding content being displayed on the first screen device 510 is monitored (step 1810). The monitored social media activity is then processed (step 1820). Finally, additional content based on the social media activity is provided on the second screen device 520 which is synched to the primary content on the first screen device 510 (step 1830). Each of these steps will be discussed in more detail below in reference to specific exemplary implementation that rely on social media activity.

Example: Social Quote Event

Popular broadcast media can potentially generate an overwhelming amount of related social messages. Second screen applications designed to support particular broadcasts have been developed to extend the branded experience. These second screen applications may include a relevant social feed by filtering messages by a hashtag or other keyword. Even with this filtering in place the message count can quickly become unwieldy for popular events (e.g. Superbowl 46 where the Tweets per second peaked at 10,245). What is disclosed herein is a mechanism to identify and surface relevant social messages for the user to see without being inundated with large numbers of messages to scan.

Current practice in many social messaging applications is to simply present the messages as they are received resulting in an almost continuous scrolling of messages as they are rendered in the user interface. Other implementations may throttle requests for messages to reduce load on the back-end servers but the number of results for each request may be large and would be difficult for a user to scan the list before the next request is fulfilled.

This disclosure offers an approach that curates social messages that are then offered to the user with timing appropriate to a second screen application that may not be entirely focused on the social messaging aspect. This is valuable when it is desirable for second-screen applications that want to integrate social messaging with other aspects of the media experience like bonus content, trivia and advertising.

In the context of an application on a second-screen device 520 where multiple items are displayed to the user in a timed fashion in sync with the media being displayed on a first screen device 510, curated social information can be interleaved with other "timeline events". For example an actor trivia "timeline event" may be presented in conjunction with a character's appearance on screen. A "Social Quote Event" may be timed for display just after an intense action scene. This latter event displays only the high-level/relevant social messages based on targeting or frequency. This provides the user a sense of what is being communicated in the social network while not requiring the user to scan through hundreds or even thousands of messages. An example of this can be seen in Figure 19.

Figure 19 depicts a wireframe screenshot 1900 showing a "Social Quote" event panel 1910 as part of the timeline of other events 1920. The panel 1910 provides a text area 1912 displaying the relevant curated social quotes. In certain embodiments one or more additional buttons are provided. In this example Button 1914 provides the ability to post or in this case re-tweet a given quote. Other possible features and implementation will be apparent to one skilled in the art given the benefit of this disclosure.

The process of providing, on a second screen device 520, social media comments relevant to content being displayed on a first screen device 510 follows the general methodology set forth in Figure 18.

First social media activity is monitored (step 1810). This involves looking for keywords, hashtags, or the like that include the name of the content being displayed on the first screen device 510, the name of the actors, the name of the director, or other related

information using techniques and methodologies that are well known in the art.

Monitoring of social media can be performed on the second screen device 520, a server 530, provided by a third party service, or a combination of thereof.

5 The step of processing (step 1820) is where the data is curated to only provide the most relevant comments or messages. To achieve the curated "Social Quote" the following heuristics may be applied:

- If the social message is targeted to the current user it should be deemed important for display. As an example this is like an "at" message (@user) in Twitter. Other targeting or addressing schemes can be employed as well (e.g. post on a wall in Facebook)
- 10 - Many social messages are simply re-sending original messages. Twitter provides a mechanism of "re-tweets" that adds metadata to a message to identify how many times it has been passed along. In this case the re-tweet count provides a metric of "importance" which is then used to select these messages for display.
- 15 -if the message contains multiple keywords it can be given greater "importance".
- if a user may have specified user preferences for which the messages can be compared to.

 In certain embodiments is also conceivable that social messages can be "sponsored" so that they automatically gain relative importance above the crowd of other messages. For example social media comments that were posted from a second screen application may be given priority. A further refinement to this would be along the lines of targeted advertising - the importance of sponsored messages can be weighted against user-specific criteria to achieve its relative ranking amongst other messages. This processing or curating can be performed on the second screen device 520, a server 530, provided by a third party service, or a combination of thereof.

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 One or a few social messages thus ranked can be displayed to the user to provide targeted and other "significant" messaging without having to resort to scanning ever-flowing lists of social messages (step 1830).

30

In the case of the timeline-based application on a second screen device 520, "Social Quote" events can be distributed throughout the timeline such that regular exposure to social networks is purposefully interleaved with other event types for a thoughtfully designed experience.

5

Example: Dynamic Advertising

A key to effective advertising is to deliver relevant offers at the right time. Current techniques involves extensive data collection on user behavior (e.g. Google tracking your searches, application use, viewing habits, etc.) which is then used to select advertisements that best suit the user's profile. A great deal of specificity can be derived using public and private data to develop these personalization profiles.

Providing a focused context for collecting data has the potential for improving advertisement delivery even further. Social messaging may indeed be used as a source for personalization but may be handled independently from other activities that the user may be engaged in simultaneously. For example a user may tweet about a particular movie and a back-end system in the cloud can record the interest in that movie. This data could then be used the next time a user visits a website that takes advantage of this data to deliver advertisements. While this may potentially result in a higher advertisement relevance to the user during the subsequent visit the context of the original social message is lost. Second-screen applications offer a known environment from which social messages can be monitored to enhance advertising personalization.

An application on a second screen device 520 can designed to display scheduled "events" in sync with primary video playback. Events can represent trivia, social content, voting, bonus material, advertisements, etc that are timed for display at relevant points in the primary video playback.

The context that the second-screen application (and device) provides is rich, to include:

- Media information. This establishes an interest in a particular media item (broadcast TV, Video, etc)

- Specific Media time information. The application knows where you are within a piece of media and any specific metadata associate with that time.

5 - Location information. Second-screen devices 520 are typically equipment with mechanisms for identifying your current location

The disclosed embodiments interleave "events" to support an overall experience. Some of these event types afford a social interaction element such as voting or can offer social messaging anytime throughout the presentation. Subsequent "events" can be reserved for advertising and can react to previous activity to include social messaging. This can be accomplished by identifying keywords within the social message itself and providing that to an advertising service along with other relevant information such as location, metadata associated with the current media time, etc.

15

The application consolidates all these variables and offers advertisements within the context of the overall experience.

For Example a James Bond film could be playing on a first screen device and a location such as Hong Kong is displayed on screen. The second-screen app displays a supporting media item such as trivia about the location. The user could send a social message (tweets) to describe her desire to go on a vacation. The word "vacation" is parsed by the application in preparation for later advertising display. Later in the second-screen timeline an advertisement "event" focusing on a vacation offer is displayed.

25

This process also follows the general methodology 1800 of Figure 18. The monitoring (step 1810) takes place when it is detected that the user has sent a social message including the keyword "vacation." In this example, the monitoring is performed on the second screen device 520, but is could also be performed at the server 530, by a third party service, or a combination thereof.

30

In the processing step (step 1820), the specific advertisement is selected from an ad service by submitting the keyword "vacation". Additional information such as the specifically known location in the movie can be derived from metadata associate to the movie at the particular time of the tweet. Additionally the advertisement can recommend a local travel agent using the user's location information. The processing can be performed on the second screen device 520, but is could also be performed at the server 530, by a third party service, or a combination thereof.

Finally, the advertisement can be displayed on the second screen device (Step 1830). An example of this can be seen in Figure 20.

Figure 20 depicts a wireframe screenshot 2000 showing a dynamic advertising event panel 2010 as part of the timeline of other events 2020. The panel 2010 provides a text area 2012 displaying the relevant advertising offers. Other possible features and implementation will be apparent to one skilled in the art given the benefit of this disclosure.

The advertisement thus becomes a natural part of the "conversation" all within the context of the media consumption experience.

While the addition of social messaging to a second screen application as discussed in the examples above enhances the experience for the user, further functionality and enhancement of the experience can be achieved if the social messaging can be time-stamped or otherwise synched with the playback of content on the first screen device 510.

Example: Synching social messages

Social messages are typically ephemeral and relevant only to the present moment in time. A common convention for associating a message to a particular event or topic is to use hashtags. These hashtags provide a means to filter for social messages of interest.

Filtering for these hashtags provides a "real-time" view of messages on the topic. This

disclosure takes this notion a step further and describes a mechanism for associating message to a specific point in time relative to the start of a media content (such as video). Social messages employing these techniques can be associated to specific points in time within the particular content. For example, social messages can be associated with an opening scene that sparks social commentary and later for other arbitrary points in the media timeline. This example becomes even more relevant when a piece of media is replayed at a later time.

In one embodiment, hashtags are used to add a timestamp. The current practice of using hashtags is well known. There is currently no widely established mechanism for describing time offset information within a social message or as additional metadata. The present disclosure provides a mechanism that can be implemented without custom extensions to the social messaging protocol. The encoded time offset is sent as part of the message itself. It is possible to obviate this approach by providing specific metadata that is not typically displayed as part of the social message itself.

Figure 21 depicts exemplary social messages 2100 that including a hashtag identifying the media 2110 is provided (this is common use today) with the addition of another hashtagged string of characters encoding the time offset 2120. In this example, the hashtag #ijkcs (2110) is used to identify Indiana Jones and the Kingdom of the Crystal Skull. The hashtag #1054675(2120) is a checksummed encoding of the frame offset.

Figure 22 depicts an exemplary flowchart of a method for creating time-stamped social messages. The method begins at block 2210. It is then determined that a user desires to create a social message (block 2220). In this embodiment, this occurs when the user selects a comment button provided as part of the application running on the second screen device 520. A timestamp of the position of the playback is then created (block 2230). In this example, this involves generating a checksum. To create the checksum the application receives positioning information directly if the media is being played back within the application or from other methods that provide position information from external sources. This numeric data is then checksummed. The user can then enter the text for the social message and request it be sent (block 2240). The timestamp is then added to the message and the message is sent or otherwise committed to the social network (block 2250). In this example, this involves appending the checksum to the social message text.

The checksum is used to ensure integrity of the data and allow a consuming application to ignore bad position data that might be maliciously or inadvertently created. This ends the method (block 2260)

5 Figure 23 depicts an exemplary flowchart of a method for consuming or otherwise reading and decoding a time-stamped social message. Once begun (block 2310) the method includes receiving a social message pertaining to the particular content in question, in this case, the content being displayed on the first screen device 510 (block 2320). In this example this involves the selection of a message based on the hashtag representing the
10 video of interest (basic search on hashtag). The position information (timestamp) can then be extracted (block 2330). In this example, this involves the application looking for an additional hashtag that immediately follows and processed as an encoded position. If the position information is found (block 2340), The position information is separated into a predetermined position and checksum. The position is confirmed against the checksum
15 (block 2350). If the position information is valid, the position can then be used to associate the social message to a particular time within the video and the message information can be displayed synched with the display on the first screen device 510 (block 2360). If the position information cannot be confirmed, the message can be discarded or displayed without being synched with the display on the first screen device 510 (block 2370). This
20 ends the method (block 2380).

 Assuming not all social commentary will be generated using an application employing the techniques of the present disclosure, the following approach may be used to modify message so they can be consumed by applications sensitive to the position
25 information.

 A separate service (e.g. in the cloud) can monitor and record real-time feeds of social messages of interest (say for a particular television broadcast). This service could use known broadcast schedules and correlate the expected time of the television event with
30 the time the messages are seen in real-time. The service then records the social message with the appended position information. The resulting repository of time-stamped message is then accessed in lieu of a direct connection to the social network. In certain embodiment

origin information for the social messages can be used to correlate to specific regions with specific broadcast times.

Example: Heat Map

5 As discuss previously, social messaging is becoming a ubiquitous feature across various software applications. One problem this presents is that the sheer quantity of messages can become overwhelming especially for popular topics. At some point the individual messages get lost in the crowd and the quantity of messages becomes the interesting social aspect. This disclosure describes a way to visualize the volume of social
10 activity over time which can then be used to identify interesting points in time for media content and also be used to navigate to those points in time.

 Many second-screen applications provide a social message "feed" that simply streams social messages as they happen. There is little organization of this information
15 beyond displaying the most recent at the top of the list or perhaps the notion of a "promoted" message that advertisers use to keep their message at the top of the stack. Messages are quickly replaced by new messages sometimes faster than a user can scan them. Once the messages have been buried in the stack their effective relevance to time is diminished.

20 The presented graphical representation referred to here as a Social Heatmap organizes social information to correspond with the timeline of a of a media item such as content being displayed on a first screen device 510. In the case of live broadcast the social message timestamp can be used to make the correlation. In the case of recorded content,
25 messages need to be stamped with the time relative to the start of the media. This can be done within the application since the relative time of the media playback can be acquired via syncing mechanisms. The sync time is added to the social message which is then made available via a social network to others using an application that is aware of the time information. In this way each social message has a relative media timestamp which aids in
30 visual placement on the screen when displaying the information on a second screen device 520.

Figure 24 depicts an exemplary flowchart of a method for consuming or otherwise reading and decoding a time-stamped social message. Once begun (block 2410) the method includes receiving a social message pertaining to the particular content in question, in this case, the content being displayed on the first screen device 510 (block 2440). This
5 can involve the selection of a message based on the hashtag representing the video of interest (basic search on hashtag) as discussed above or it could be based on keywords in the messages themselves. Timestamp information associated with the message is then looked for and messages without associated timestamp information are discarded (block 2430). In certain embodiments this involves the application looking for an additional
10 hashtag that immediately follows and processed as an encoded position. Based on the associated timestamp information, the messages can be allocated to bins (block 2450). This process is discussed in more detail below. A graphical representation of the social messages associated with specific time periods of the primary content on the first screen device 510 can then be displayed on the second screen device 520 while the primary
15 content is being displayed on the first screen device 510. In certain embodiments the graphical representation of the social messages associated with specific time periods also graphically represent the intensity or frequency (i.e. the number) of social messages associated the specific periods of time and as such is referred to as a heatmap. The user can then use the heatmap to navigate the through the content on the first screen and the
20 associated social messages (block 2460). Such navigation is discussed in more detail below. This ends the method (block 2370).

Bins are mechanism used for grouping messages with discrete sections of time. The number of messages in each bin can corresponds to the activity level for that section of
25 time. It has been found that the screen width of each bin should be wide enough to afford navigation (e.g. using a touch device) but small enough to provide navigation resolution. An example of this can be seen in Figures 25 and 26.

In the example of Figure 25, a tablet application allocates 1000 pixels of width for
30 the heatmap 2500. These 1000 pixels represent the entirety of the media playback time, say 50 minutes. This allows approximately 20 pixels of screen width per minute of content. If we use a bin width of 20 pixels then our navigation resolution will be to the nearest minute and the sensitivity for navigation will require a move of 20 pixels from bin

to bin. Figure 26 depicts an exemplary plot of sample count for values allocated to bins for rendering. The number of messages in a bin may be graphically represented using color, plots, or other indicators. The actual sensitivity that should be used will depend on the input device, user demographics and other factors.

5

Figure 27 depicts an exemplary wireframe screenshot 2700 including a social heatmap or timeline. In this embodiment event panels 2710 displayed as part of a timeline view on the second screen device 520 which a user can scroll through as described previously. A Comment button 2720 is provided to allow the user to send social messages regarding content being displayed on the first 510 or second 520 screen devices. Social messages generated using such a function can include content and timestamp information for processing and inclusion in the heatmap 2750. Sync indicator button 2730 allows the user to synchronize the events of the timeline view with the content being displayed on the first screen device 510. Button 2730 can also indicate the status of the synchronization. At the bottom of the screenshot 2700 there is also a playback position indicator 2740 and the social heatmap 2750. The playback position indicator graphically displayed the current position in the playback of the primary content on the first screen device 510. In certain embodiments, a user can adjust the indicator to change the current playback position in the primary content being displayed on the first screen device 510. The social heatmap 2750 has bins representing social messages associated with time periods in the playback of the primary content. Selecting bins, for example by sliding or "scrubbing" along the social heatmap 2750 causes the associated social messages to be displayed. Examples of this can be seen in Figures 28-32.

Figure 28 depicts the screenshot 2700 of Figure 27 with a pop-over panel 2800 that is displays the social messages associated with a bin 2810 in the social heatmap 2750 when a specific bin is selected by a user as represented by icon 2820. Figure 29 depicts one embodiment of how messages can graphically be transition between (as indicated by arrow 2900) in the popover panel as a user scrolls or scrubs along the heatmap 2750 (as indicated by icon 2820). Figure 30 indicates one possible embodiment of a panel 3000 that can be displayed if there are no social messages associated with a bin 2810. Figure 32 depict how multiple messages can be scrolled through within a panel 3100. In this example, messages can be scrolled through vertically as indicated by arrows 3110. In certain embodiments a

30

scroll bar indicator 3120 is provided to indicate that there are multiple messages to be scrolled through. Figure 32 depict another embodiment wherein selecting individual messages within the panel 3200 provides the user with additional functionality. In this example, selecting a message provides additional buttons that allow the user to resend ("re-tweet") a message 3210 or got the specific instance in the playback of the content on the first screen device 510 for with the message is associated.

Figure 33 depicts a skinned version screen 3300 of the screen 2700 of Figure 27. In this example color and peaks are used to graphically indicate the intensity of social messages along the heatmap 3310.

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 spirit and 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 herewith 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
5 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
10 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 of
15 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
20 many other varied embodiments that still incorporate these teachings. Having described preferred embodiments for a method and system for providing media recommendations (which are intended to be illustrative and not limiting), it is noted that modifications and variations can be made by persons skilled in the art in light of the above teachings.

25 While the example set forth above has focused on an electronic device, it should be understood that the present invention can also be embedded in a computer program product, which comprises all the features enabling the implementation of the methods described herein, and which, when loaded in a computer system, is able to carry out these methods. Computer program or application in the present context means any expression, in
30 any language, code or notation, of a set of instructions intended to cause a system having an information processing capability to perform a particular function either directly or after either or both of the following a) conversion to another language, code or notation; b) reproduction in a different material form.

Additionally, the description above is intended by way of example only and is not intended to limit the present invention in any way, except as set forth in the following claims.

What is claimed is:

- 1 1. A method of providing advertising on a second screen that is synchronized with
2 content on a first screen based on social messages relating to content being displayed
3 on the first screen, the method comprising:
4 monitoring social media for one or more messages relating to content being
5 displayed on the first screen;
6 processing the one or more messages to determine keywords for advertising;
7 and
8 providing advertising based on the keywords for display on the second screen.
- 1 2. The method of claim 1, wherein the social media being monitored is Twitter.
- 1 3. The method of claim 1, wherein the provided advertising is based on the content being
2 displayed on the first screen.
- 1 4. The method of claim 1, wherein the social media being monitored is Facebook
- 1 5. The method of claim 4, wherein the provided advertising is based on a time period in
2 the display of the content on the first screen.
- 1 6. The method of claim 1, wherein the provided advertising is sponsored advertising.
- 1 7. The method of claim 1, wherein the providing step comprises providing the advertising
2 as an event in a timeline of events synched the content being displayed on the first screen.
- 1 8. The method of claim 1, wherein the step of monitoring is performed remotely.
- 1 9. The method of claim 1, wherein the provided advertising is based on the location of the
2 second screen.
- 1 10. A second screen device comprising:
2 a screen configured to display content;

3 storage for storing data; and
4 a processor configured to monitor social media for one or more messages
5 relating to content being displayed on a first screen, process the one or more messages
6 to determine keywords for advertising, and provide advertising based on the keywords
7 for display on the second screen.

1 11. The second screen device of claim 10, further comprising a wireless network interface
2 for wireless communication.

1 12. The second screen device of claim 10, wherein the processor is further configured to
2 provide access to social media.

1 13. The second screen device of claim 10, wherein the second screen device comprises a
2 touch screen device.

1 14. A machine readable medium containing instructions that when executed perform the
2 steps comprising:

3 monitoring social media for one or more messages relating to content being
4 displayed on a first screen;
5 processing the one or more messages to determine keywords for advertising;
6 and
7 providing advertising based on the keywords for display on the second screen.

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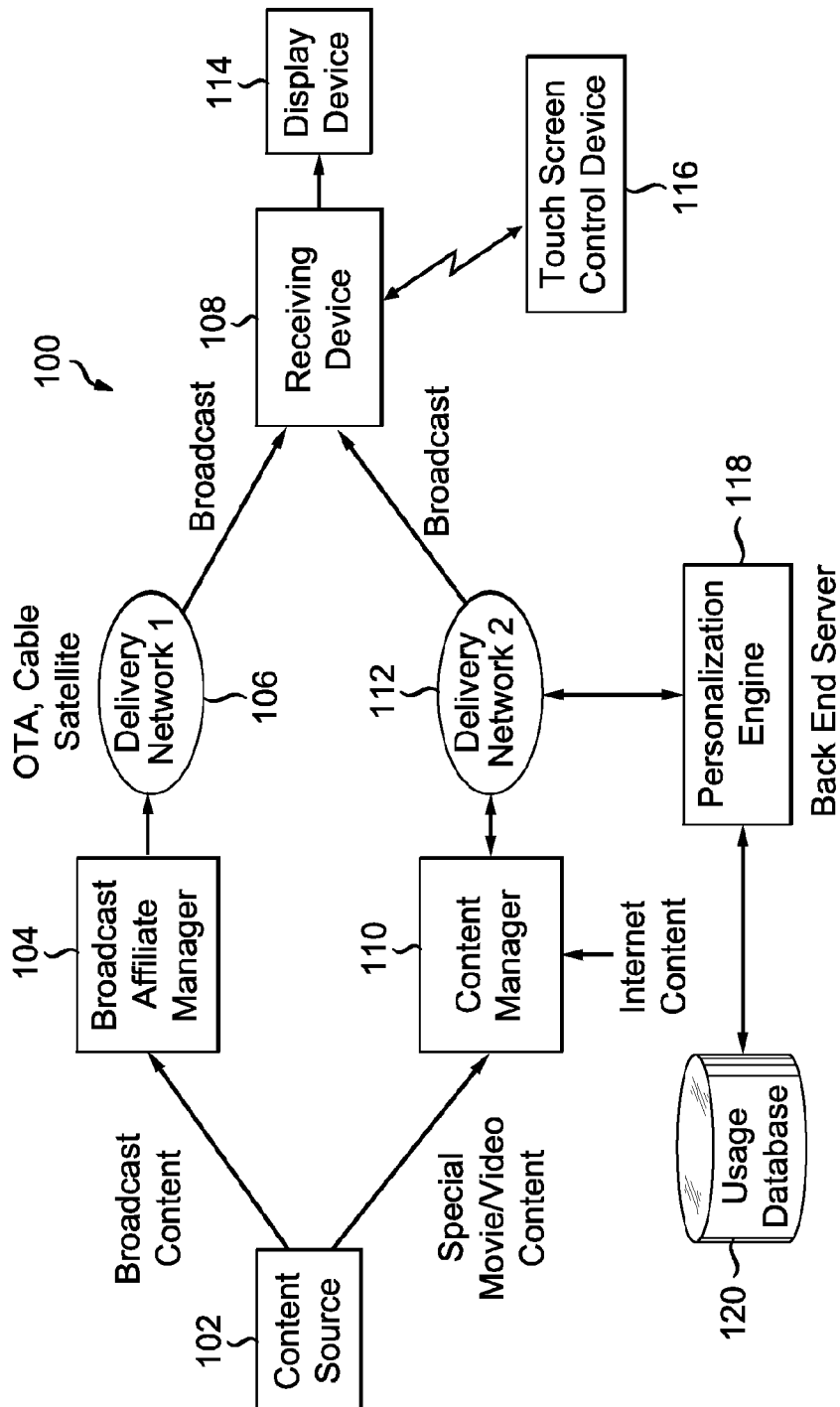


FIG. 1

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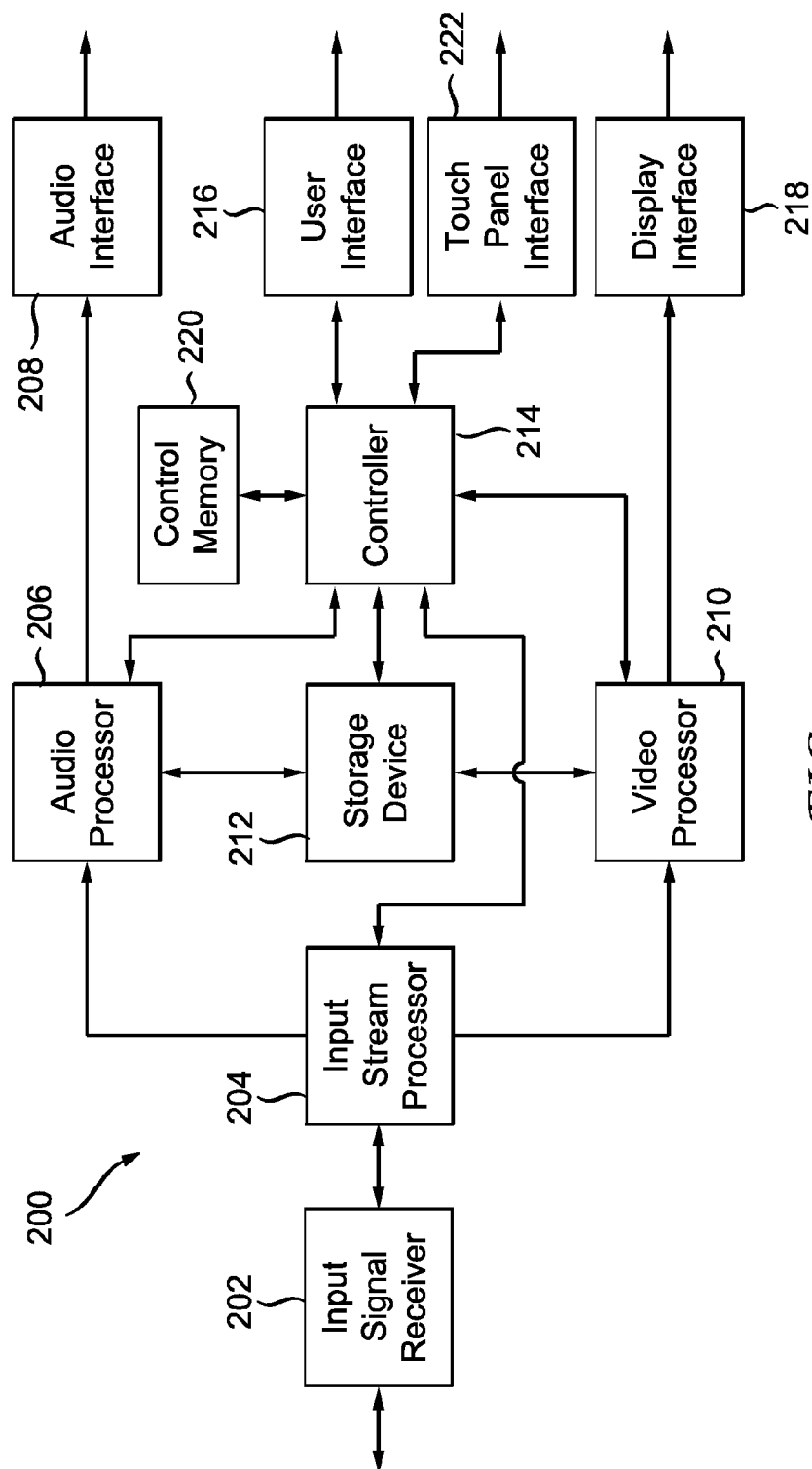


FIG. 2

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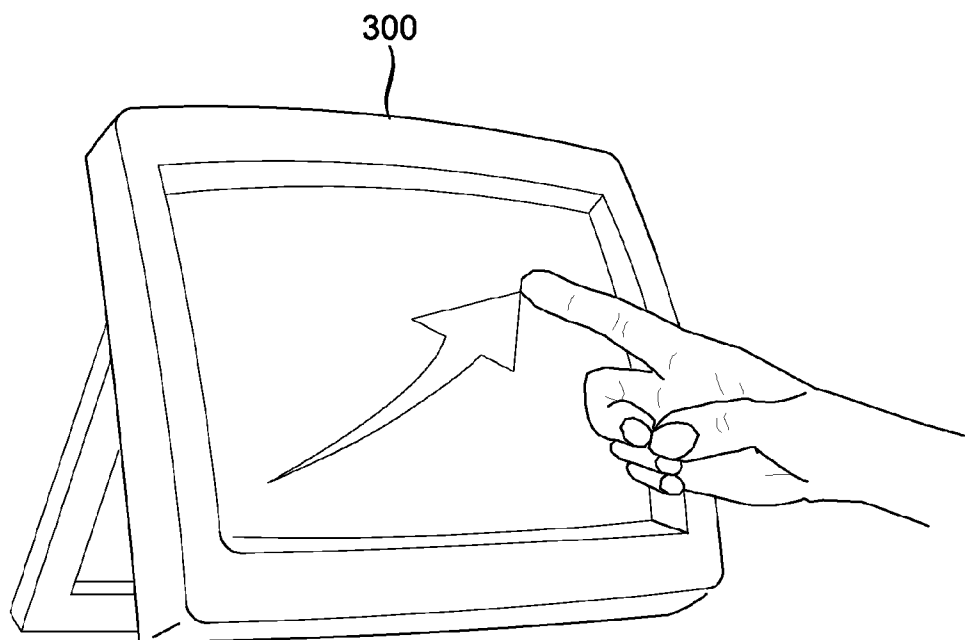


FIG. 3

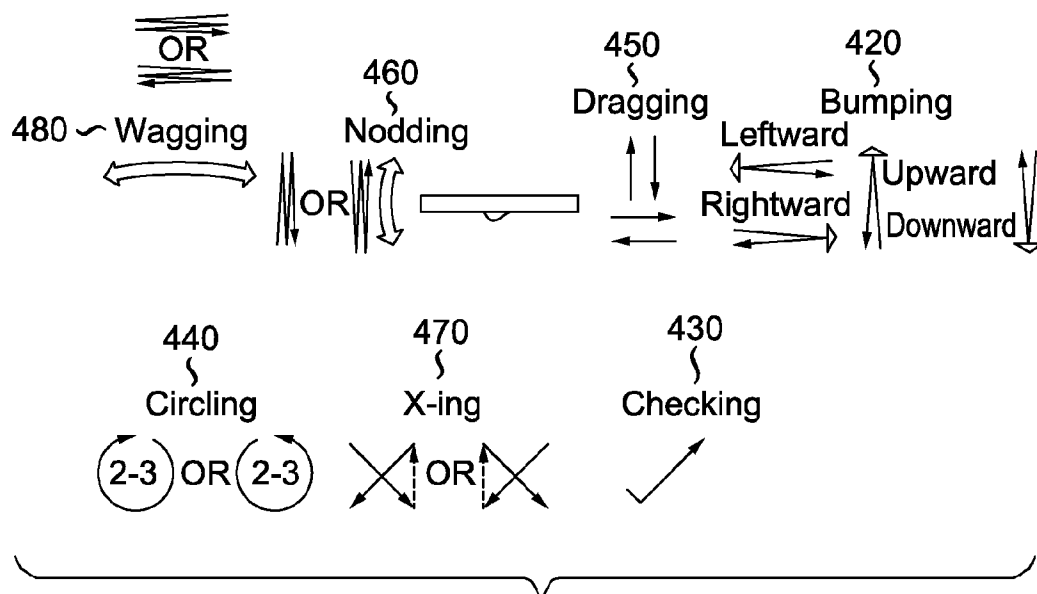
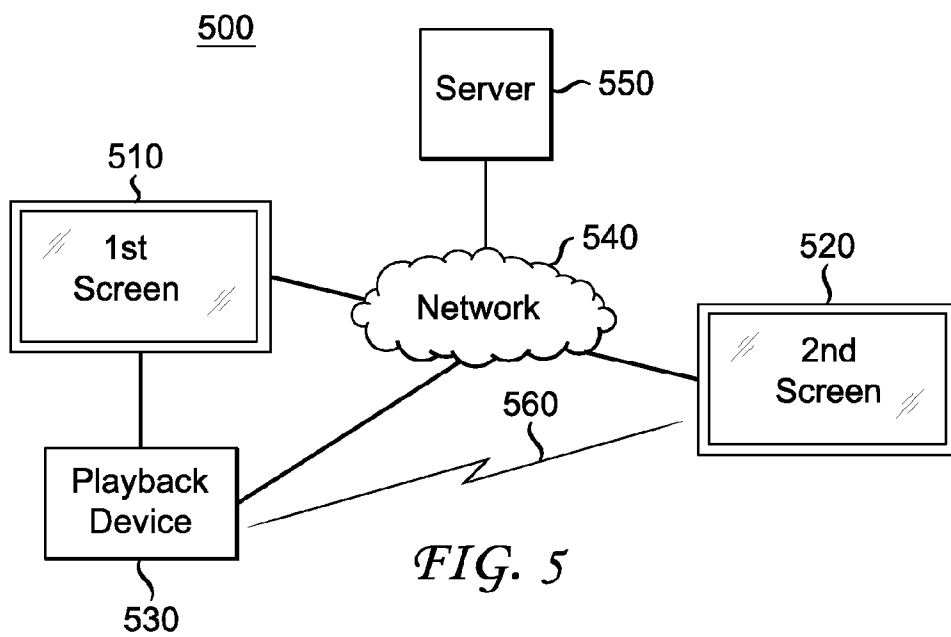
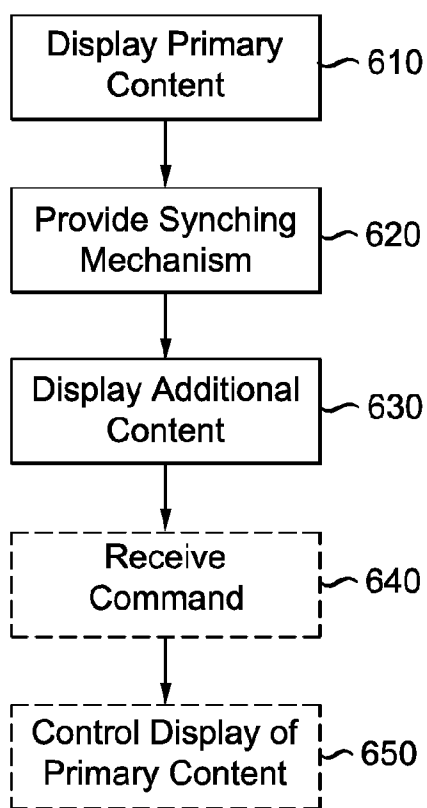


FIG. 4

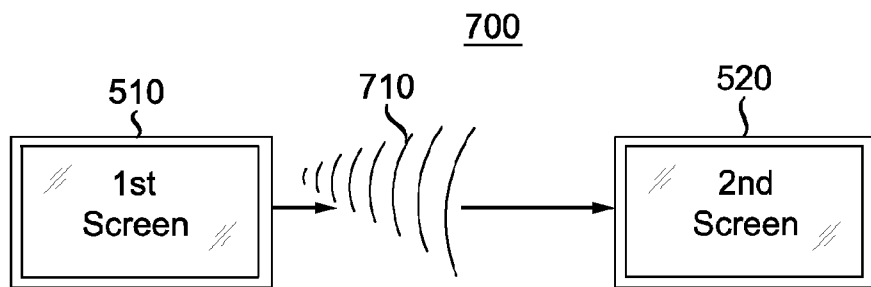
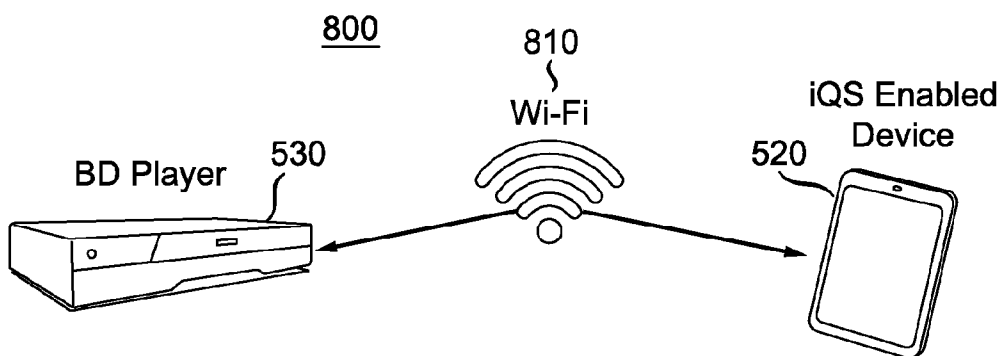
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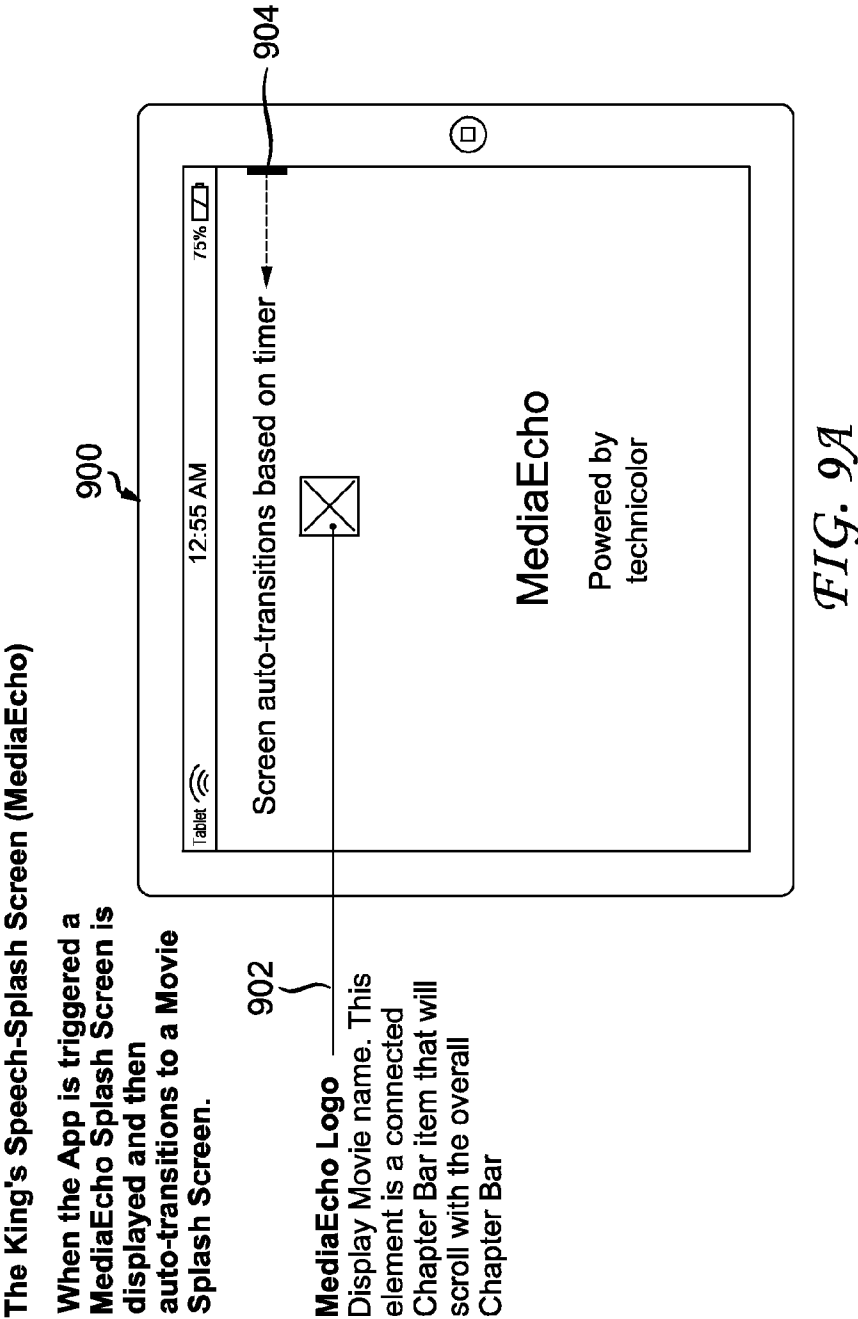
600*FIG. 6*

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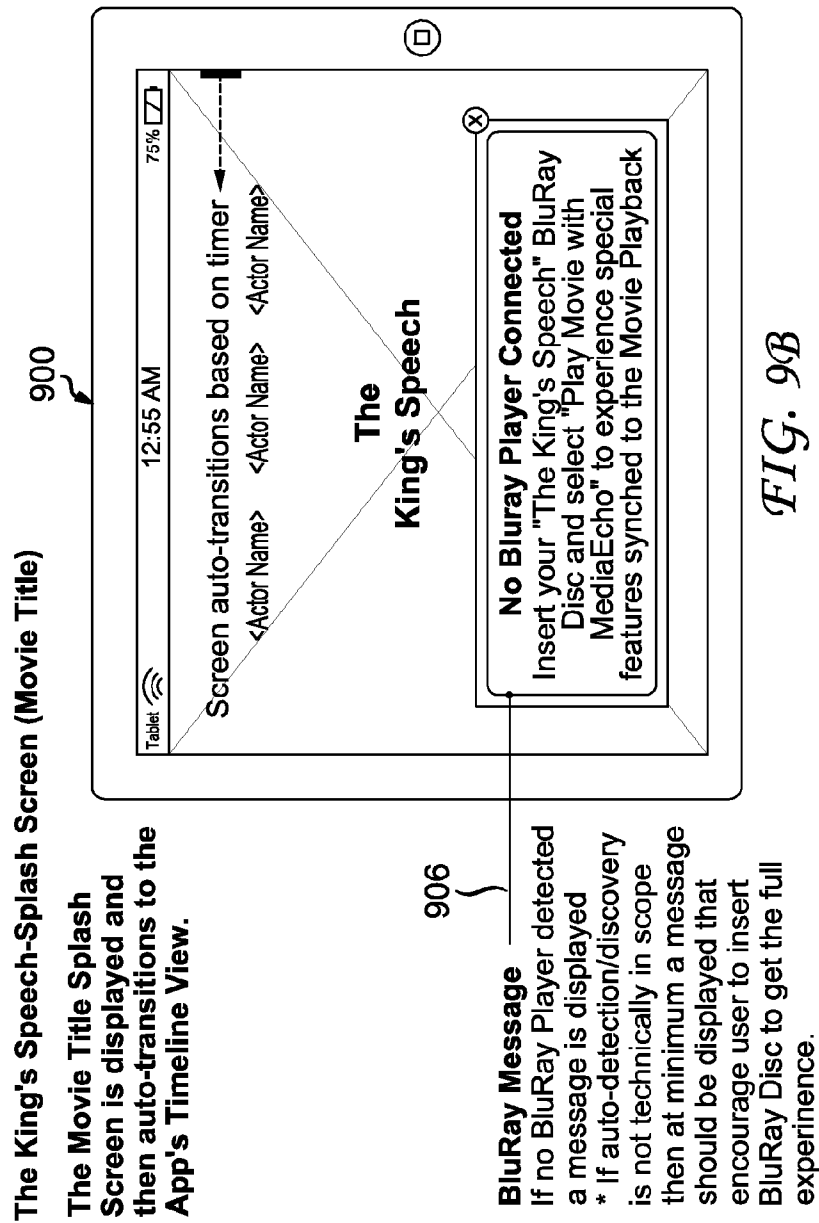
*FIG. 7*

- ① iPad broadcasts security key using mDNS (UDP socket based communication)
- ② BD Player authenticates iPad and responds with IP and PORT
- ③ iPad closes all UDP communication and opens direct TCP socket connection with BD Player
- ④ Connection has been established for secure two-way communication between iPad and BD Player

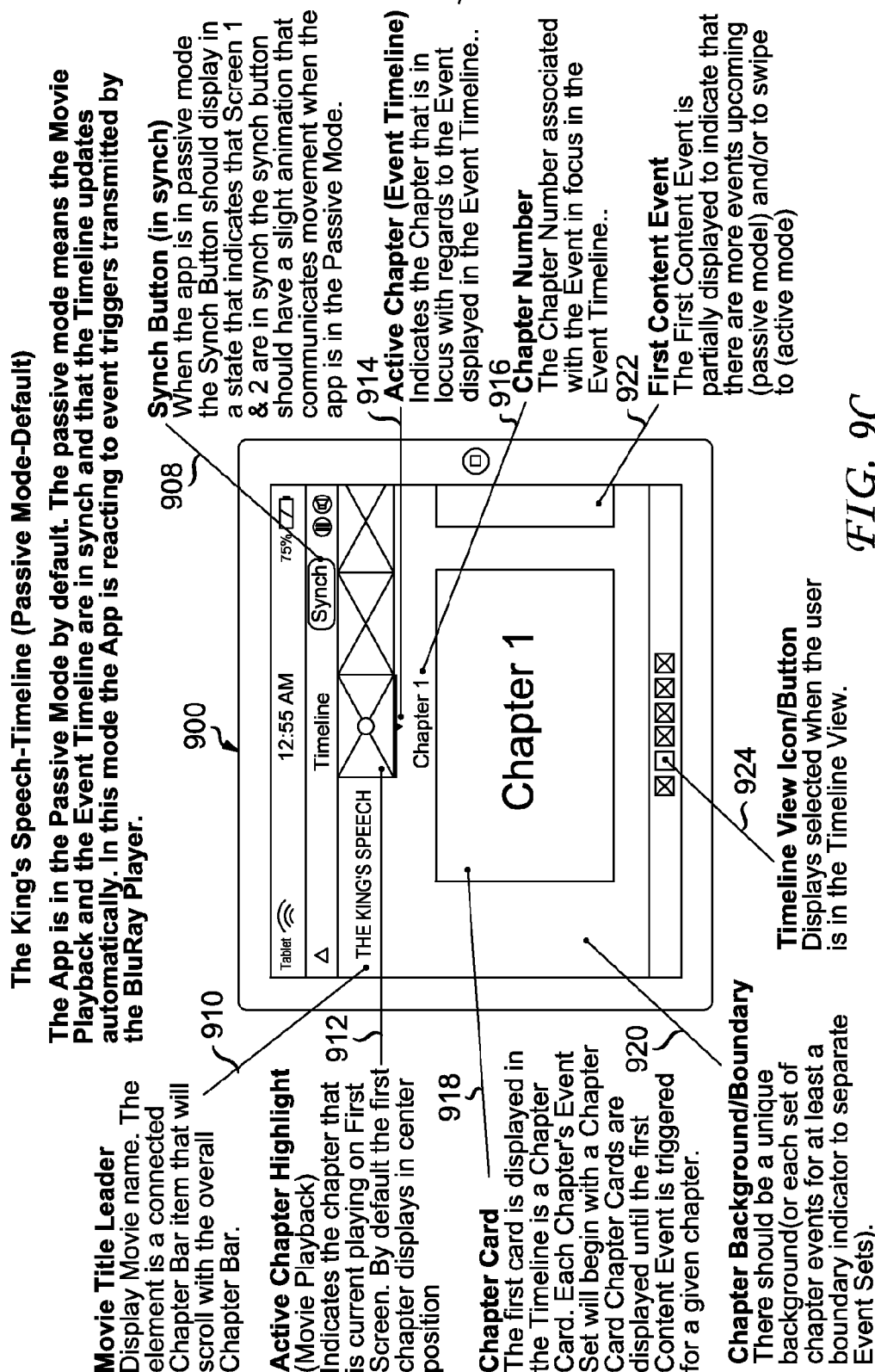
FIG. 8

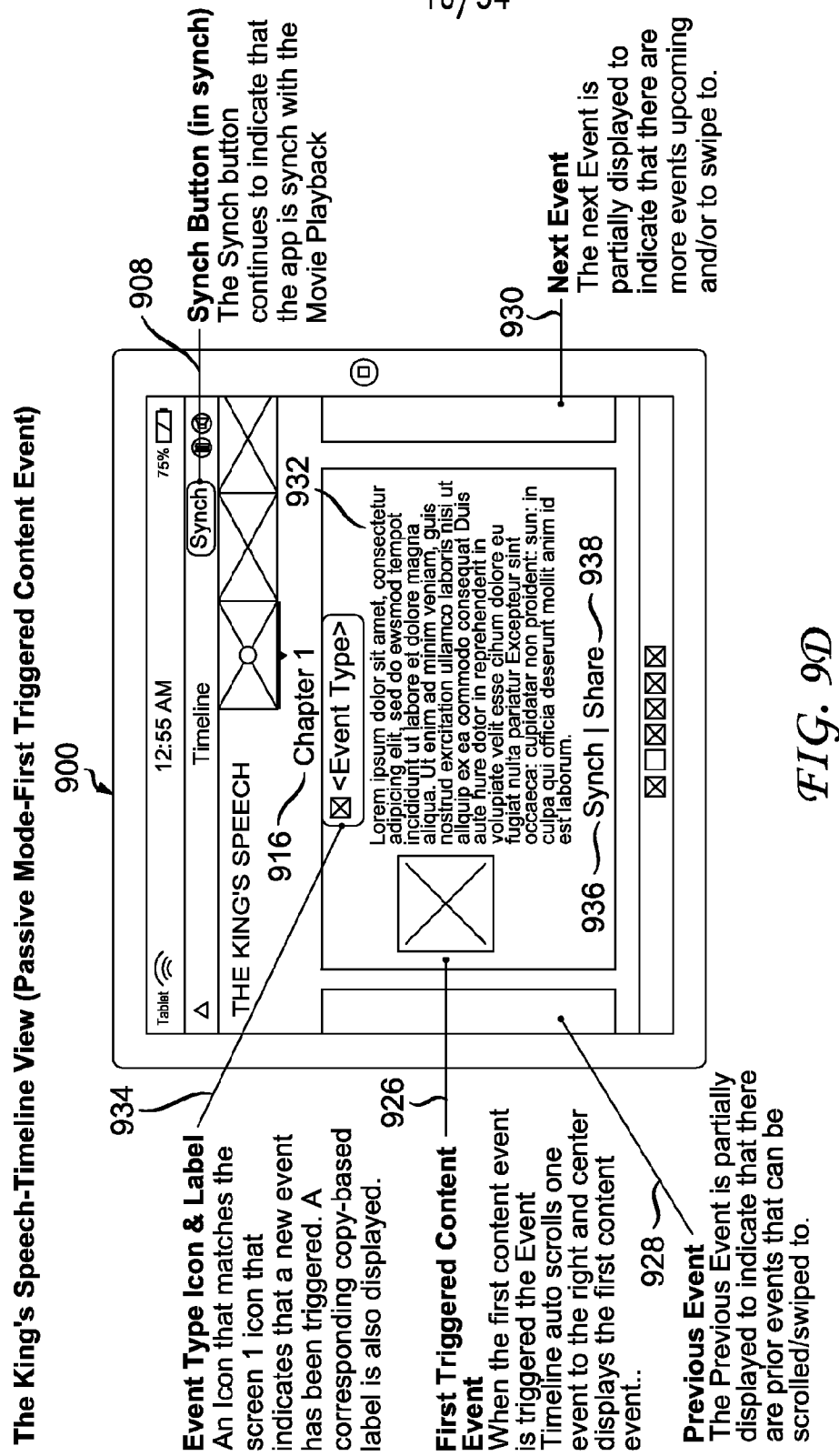


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The King's Speech-Timeline View (Passive Mode-Auto-Chapter/Event Progression)

912

Passive Mode Progression -

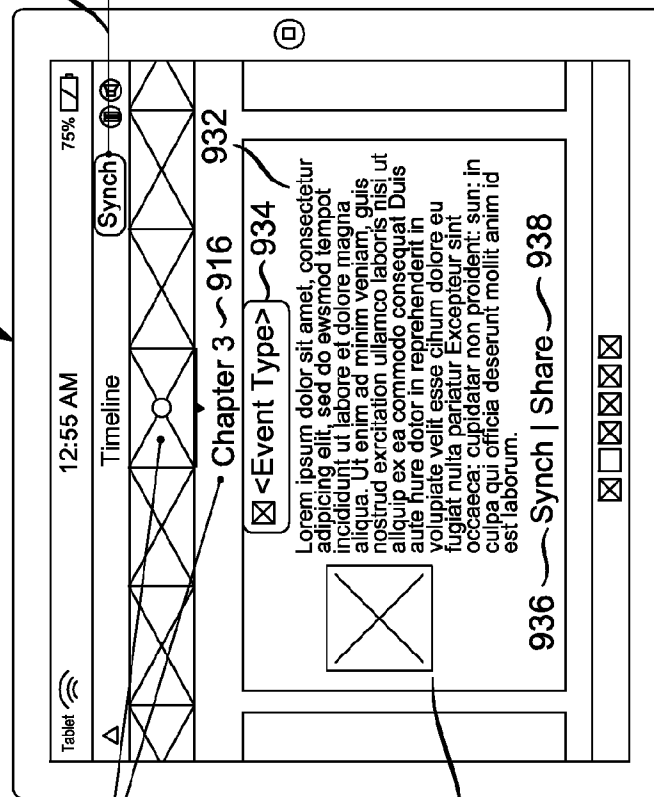
While the user is in Passive Mode the Movie playback, the Chapter Timeline and the Event Timeline remain in synch as the movie progresses.

806

Synch Button (in synch)

The Synchron button continues to indicate that the app is synchronizing with the Movie Playback

006



926

FIG. 9E

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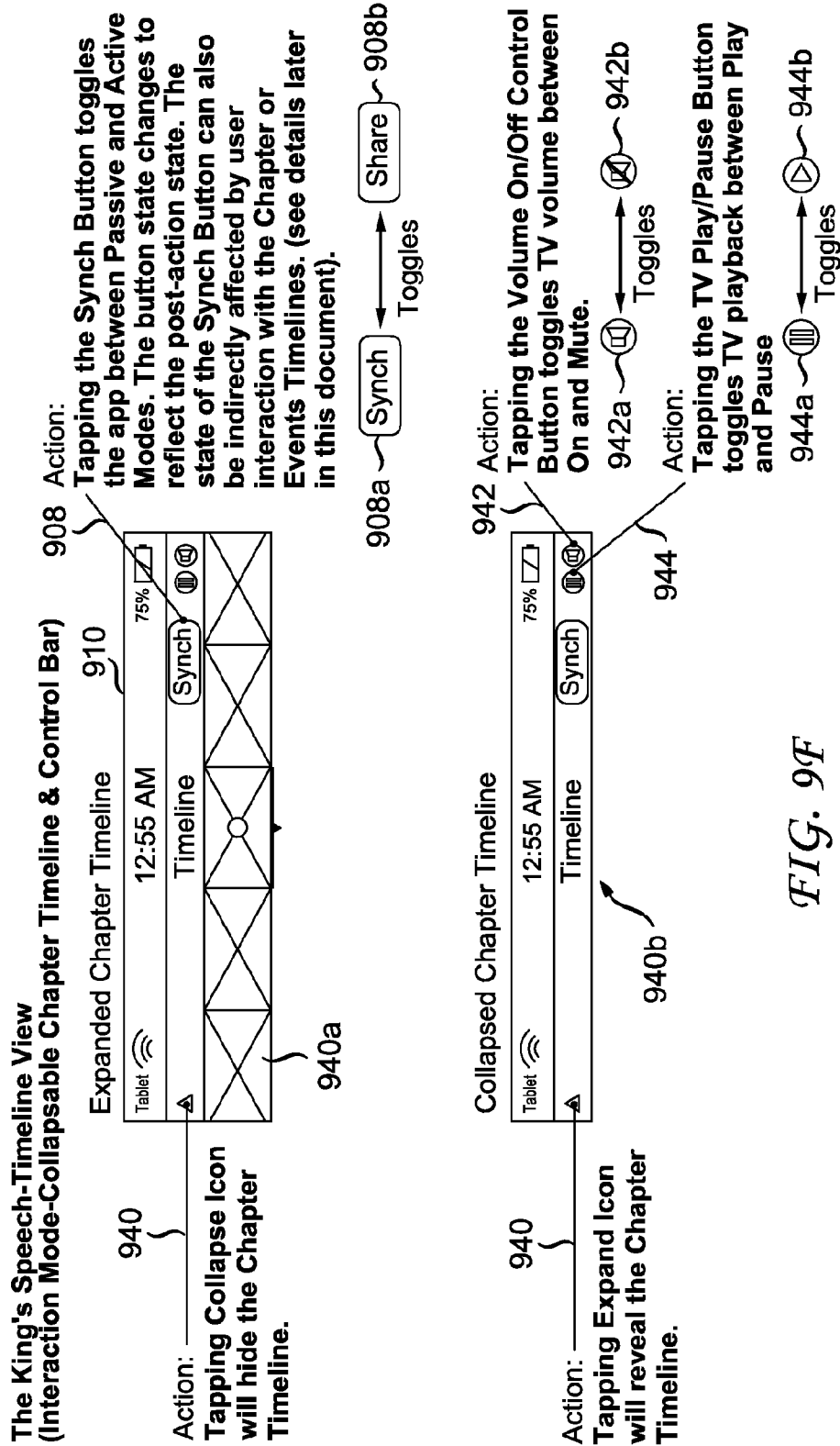


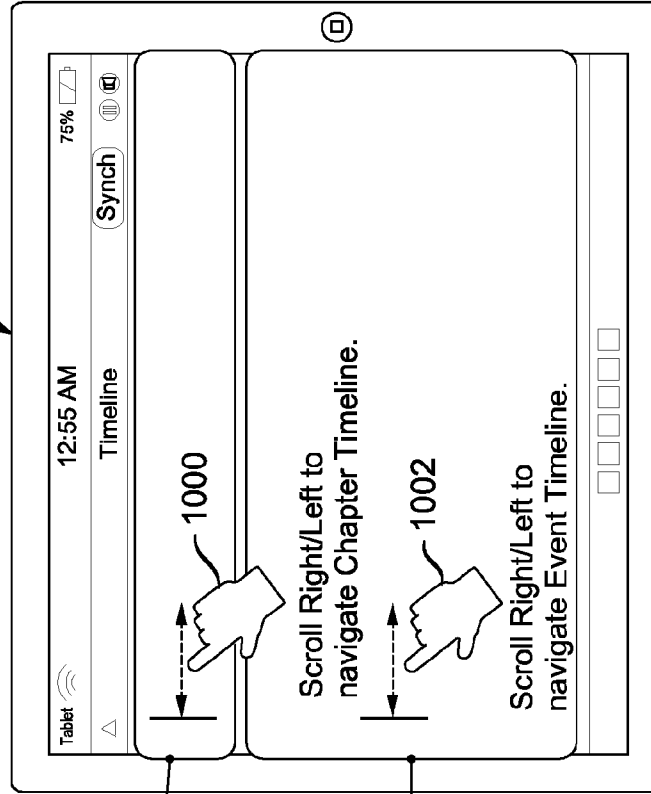
FIG. 9F

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The King's Speech-Timeline View (Interactive Mode Chapter and Event Timeline)

The Chapter Timeline and Event Timeline are two independently scrollable panes that function like interdependent gears in which movement (horizontal scrolling) in the other.

900



910

Chapter Timeline

Contains the Movie Title Leader and Chapter Thumbnails in the order that reflects the chapter sequence of the corresponding movie. All movie chapter are represented in the timeline.

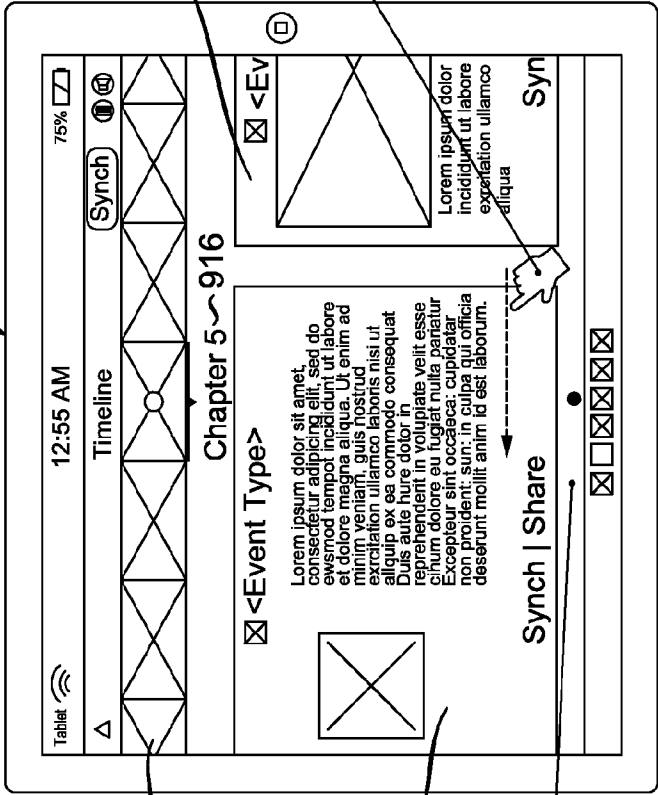
918

Event Timeline

Display the sequence of Events for the complete movie. The Events Timeline can be continuously scrolled from the first movie event to the last movie event. Chapter breaks/transitions should be indicated by background changes or audio/visual boundary cues to distinguish Event Sets (collection of events for a given chapter).

FIG. 10A

The King's Speech-Timeline View
(Active Mode-Event Timeline Swipe)



900

910

930

926

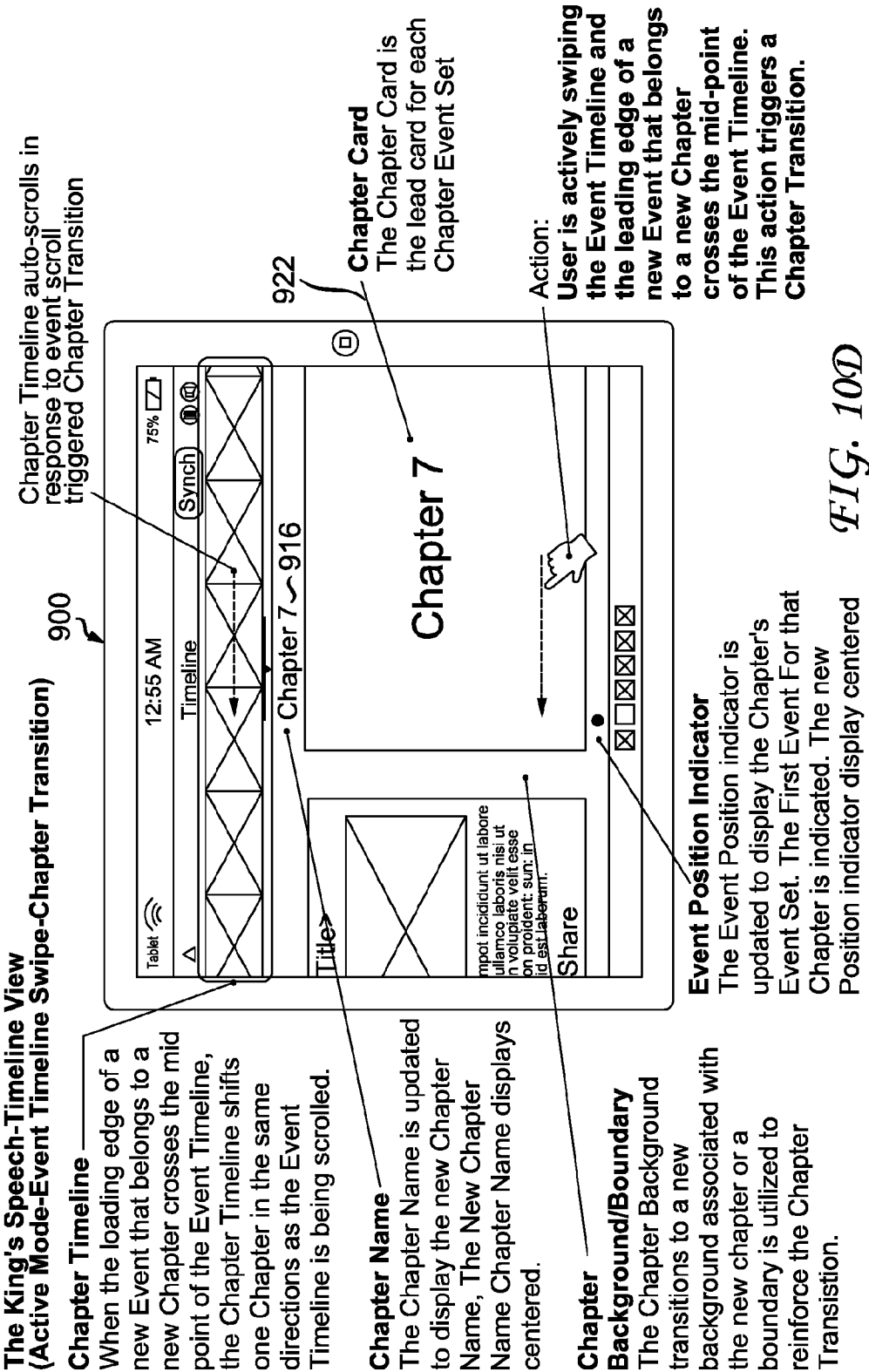
1006

Action:

When the user swipes the Events scroll and a position indicator is displayed. The Event Position Indicator should update when the leading edge of a new Event crosses the mid-point of the Event Timeline. When the Event Timeline is released the Event that most crossed the center position should snap to center.

Event Position Indicator (condition display)
Only displays when the user is engaged with scrolling the Events Timeline. All Events for the Chapter in focus should be represented indicates the user's relative position within the Active Chapter's Event Set as they scroll.

FIG. 10C



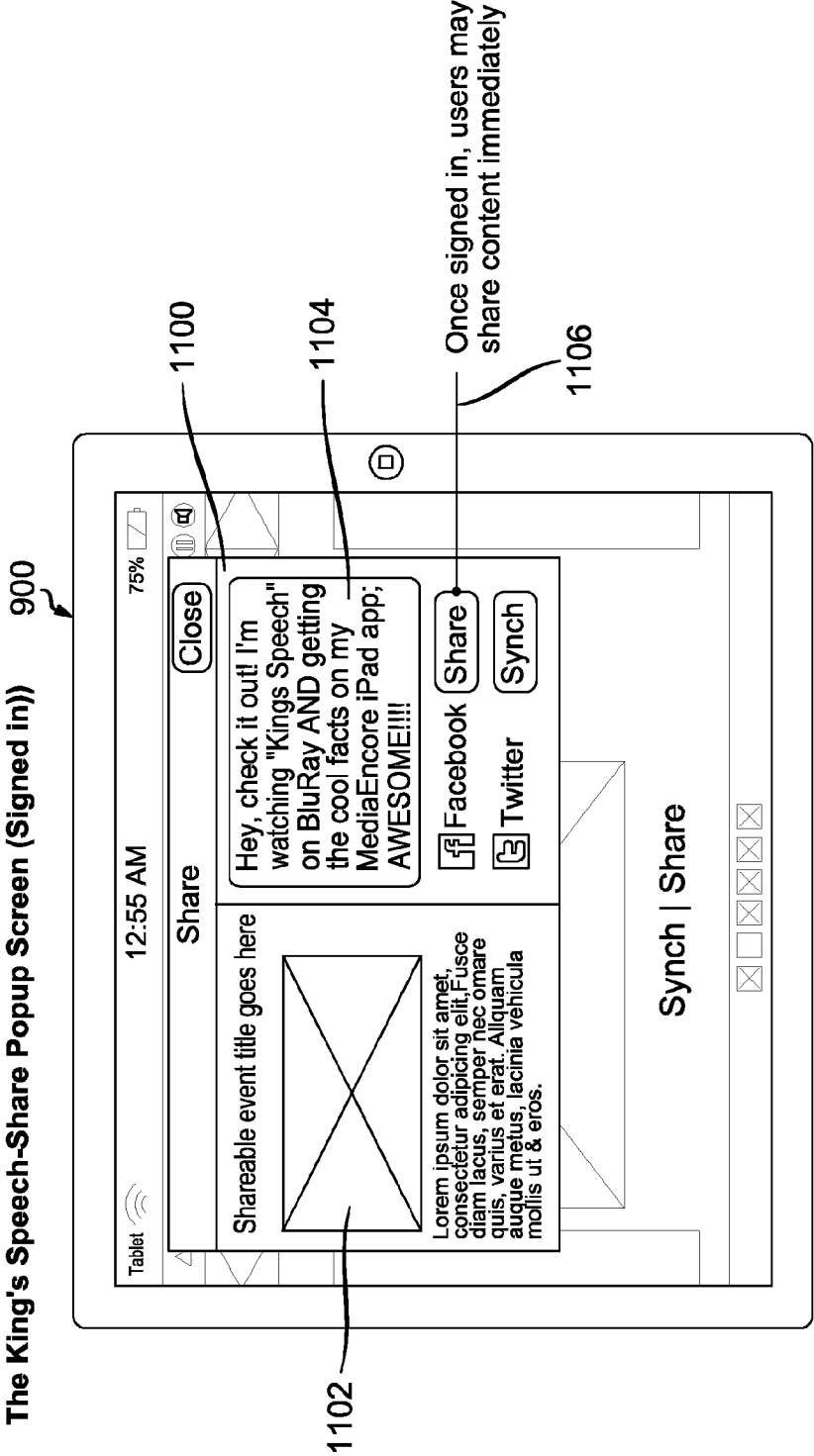


FIG. 11A

The King's Speech-Share Popup Screen (Not Signed in) 900

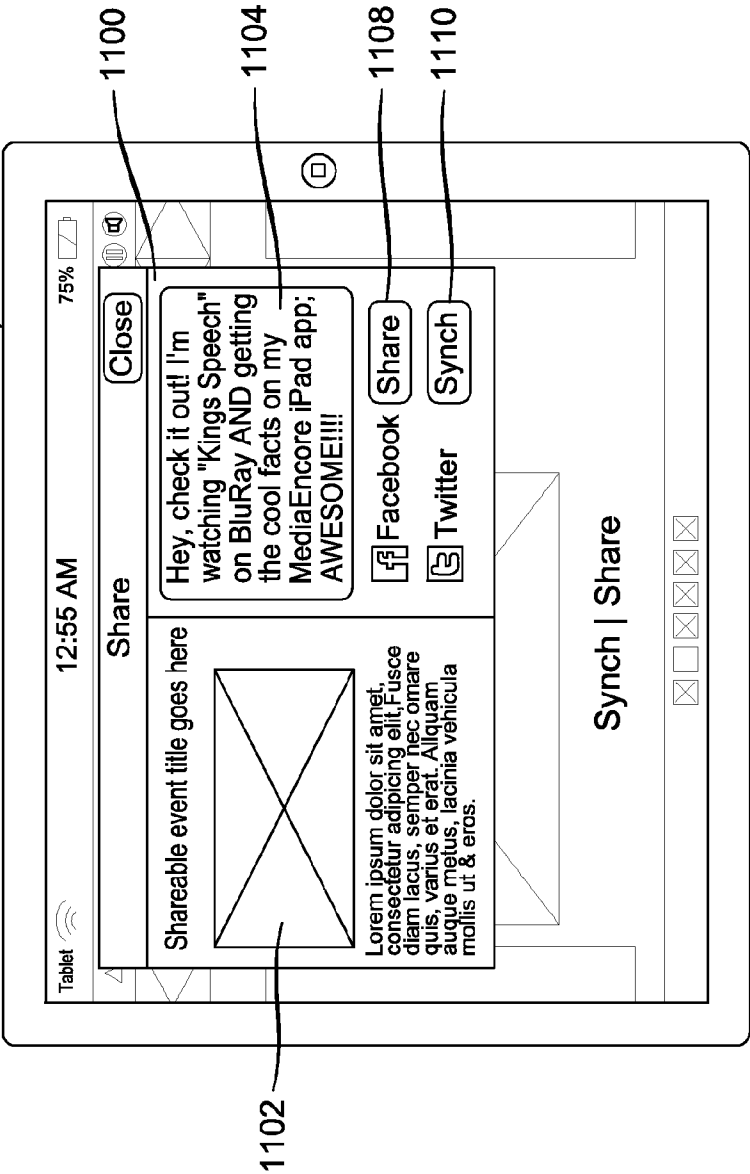
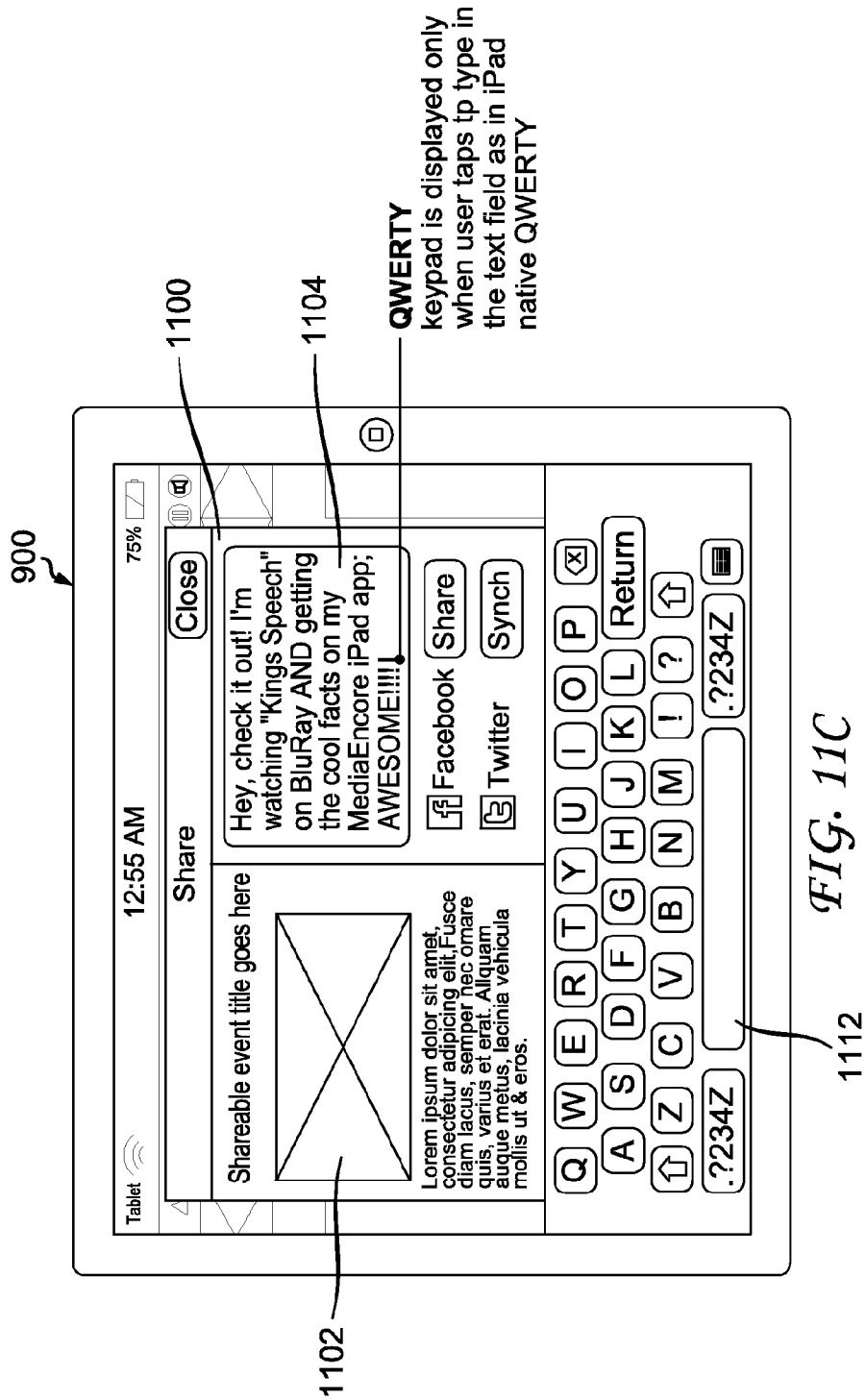
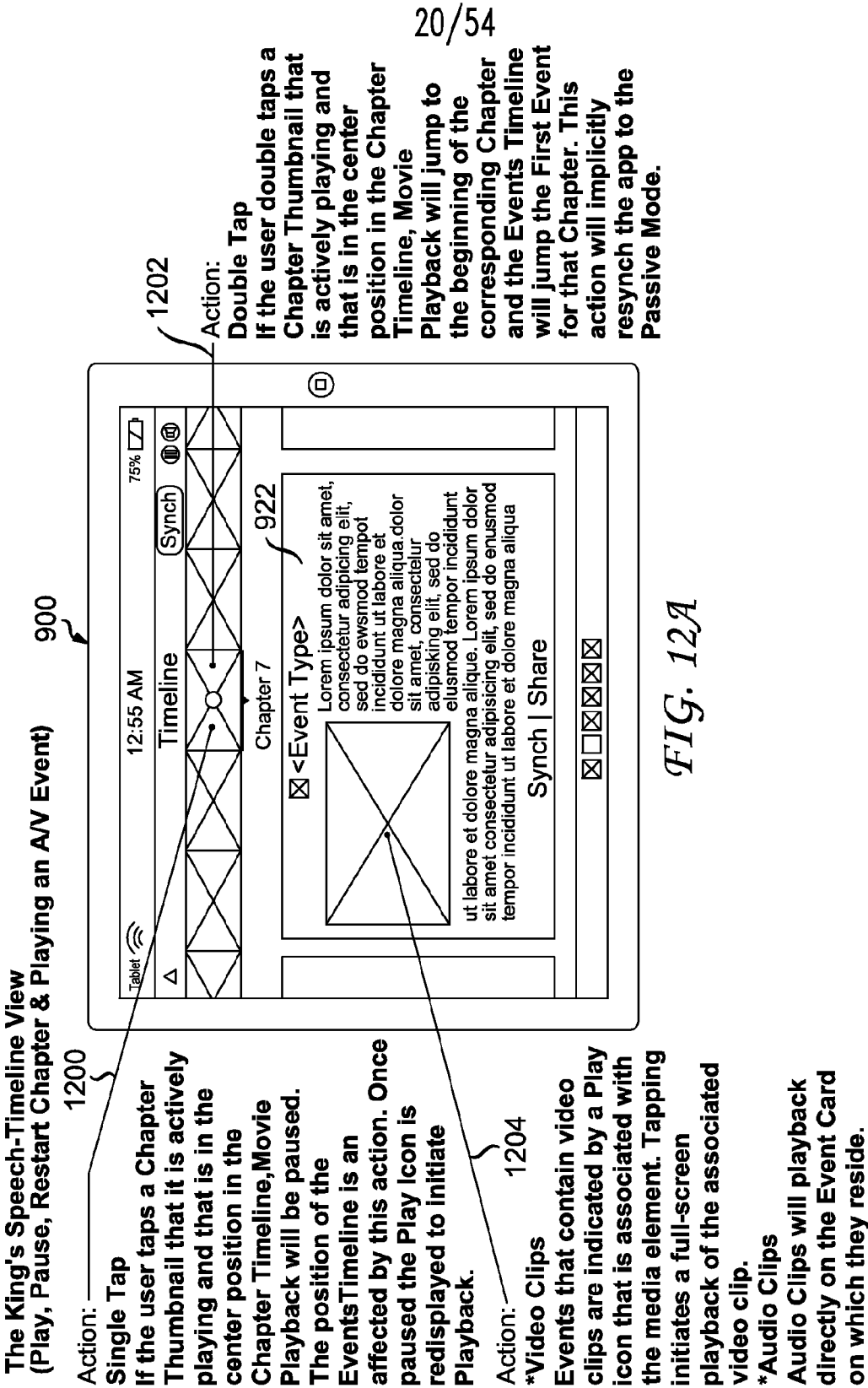


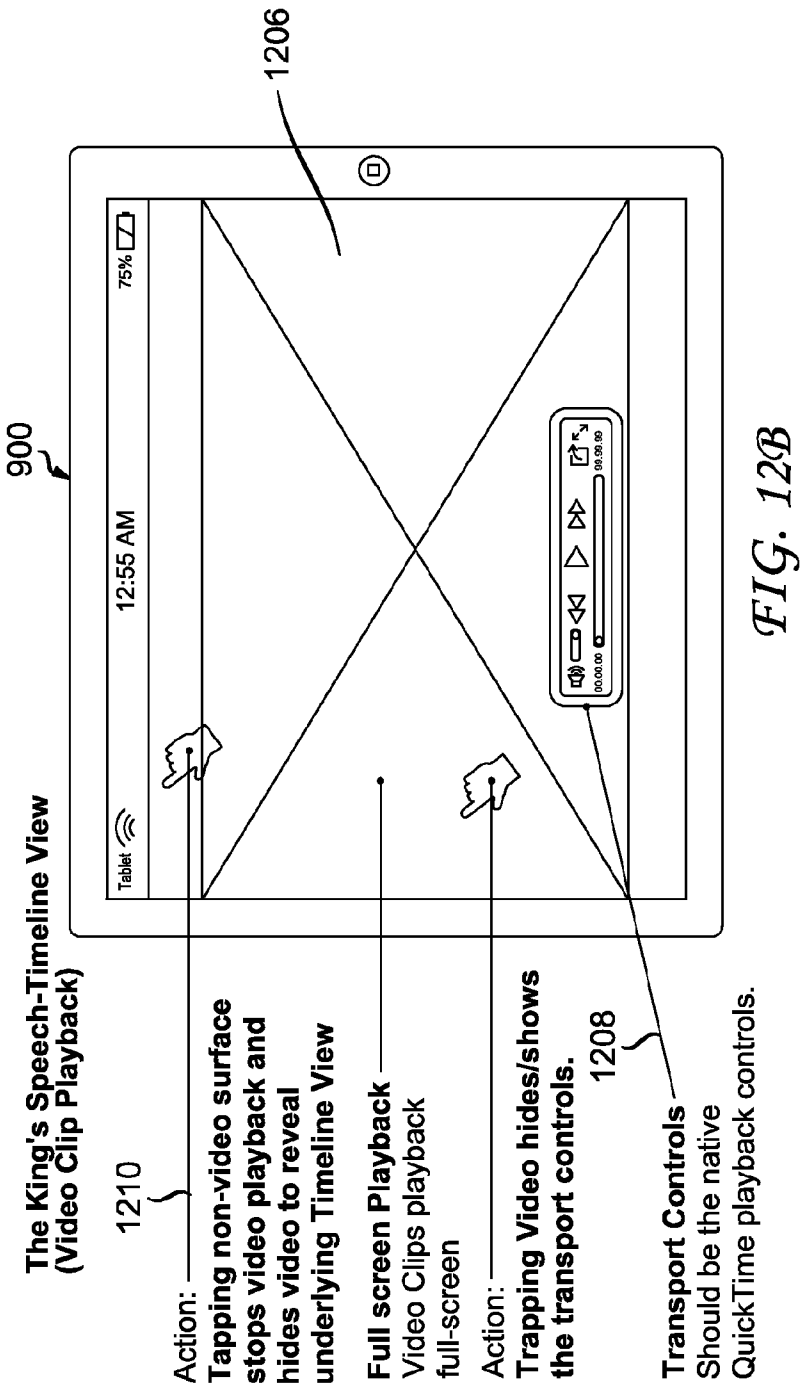
FIG. 11B

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The King's Speech-Share Popup Screen (Not Signed in) with QWERTY







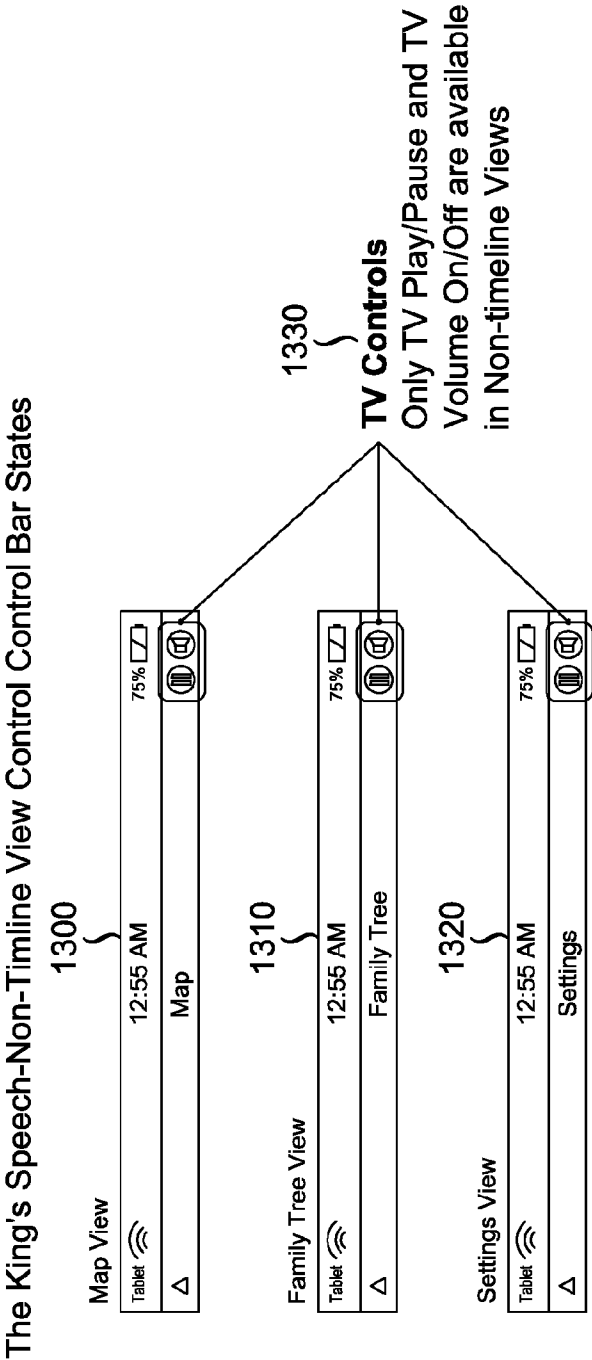
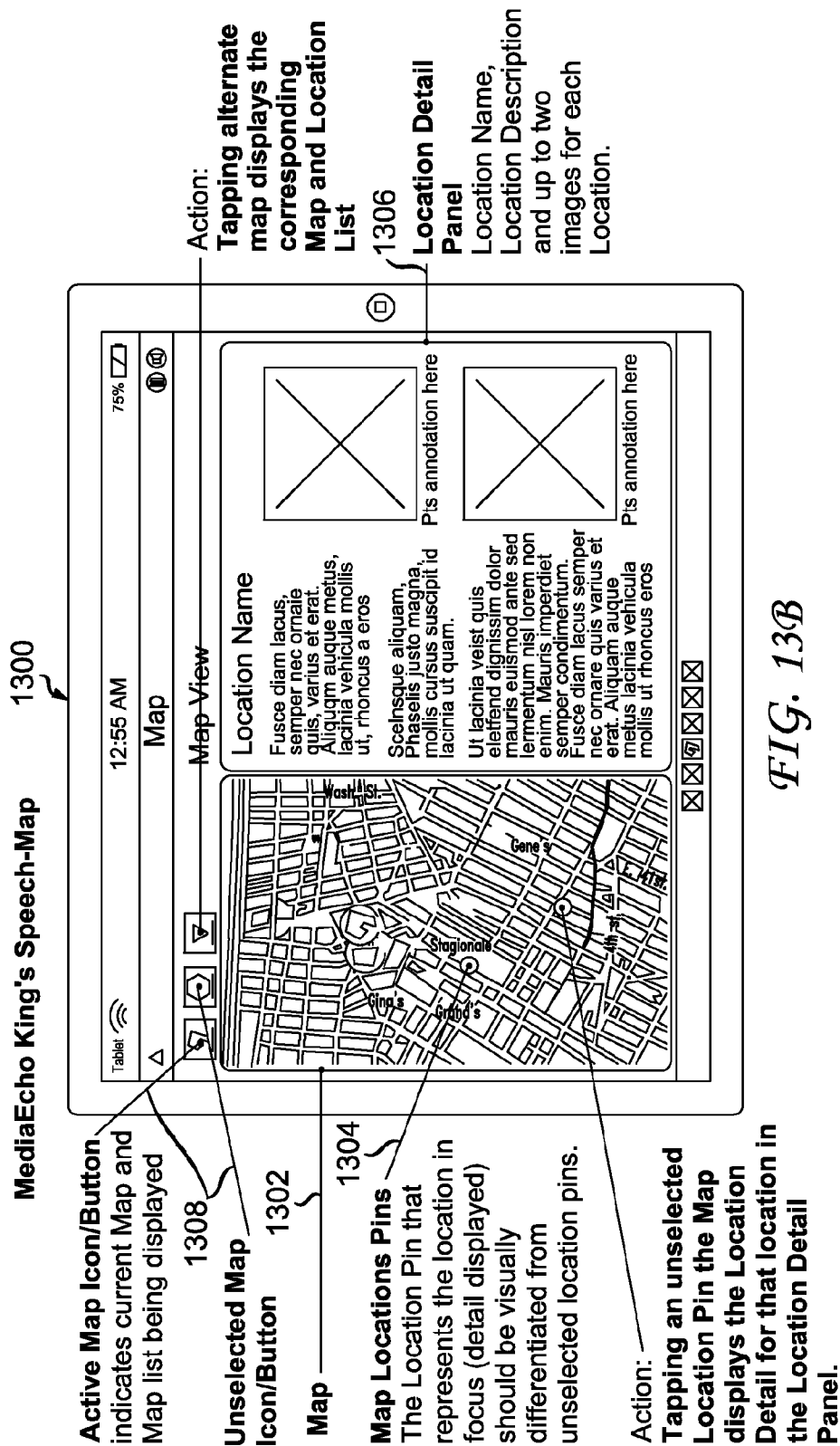


FIG. 13A



King's Speech - Family Tree View (Genealogical Tree - Monarchical Lineage)

The FamilyTree Displays the Monarchical Lineage, i.e. all the direct descendants of monarchs starting with George V the father of the movie's lead character George VI.

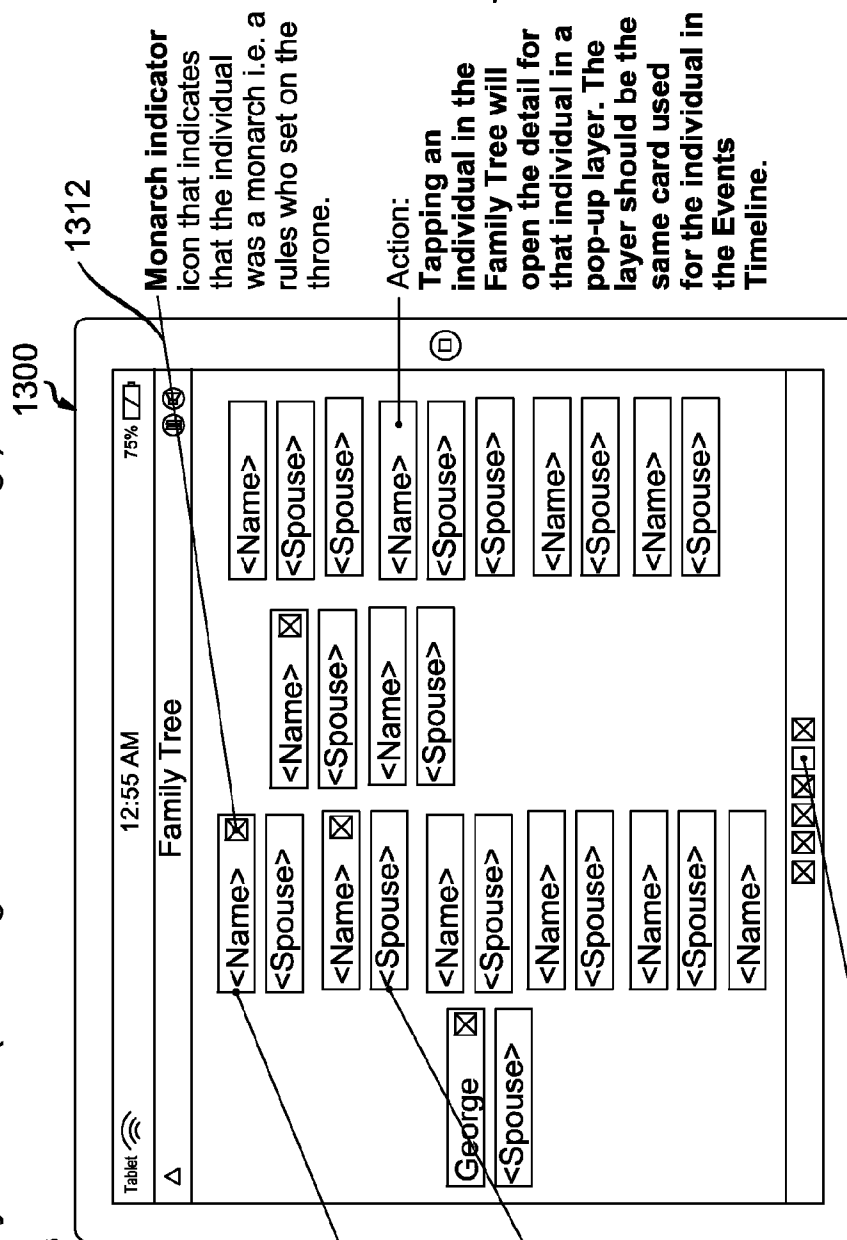
Monarchical Lineage
Individuals who are part of the monarchical lineage, i.e. direct descendants of monarchs should have a unique visual treatment.

Spouse 1312
Individuals who married
into the monarchical
lineage should have a
unique visual treatment.


Family Tree View Icon/Button


Displays selected when the user is in the Family Tree View

FIG. 13C






MediaEcho King's Speech - Settings 1320

Tablet 

12:55 AM  75%

△


Settings  

1322  Audio + Video

Auto Play Video ☐ On

Auto Pause Video ☐ Off

Auto Audio Volume ☐ Low

1324  Events

Bonus Videos ☐ On


Bonus Audio ☐ On

Cast+Crew Info ☐ On

Family Tree ☐ On

Map ☐ On

Share ☐ On

1326  Share

Facebook

Twitter


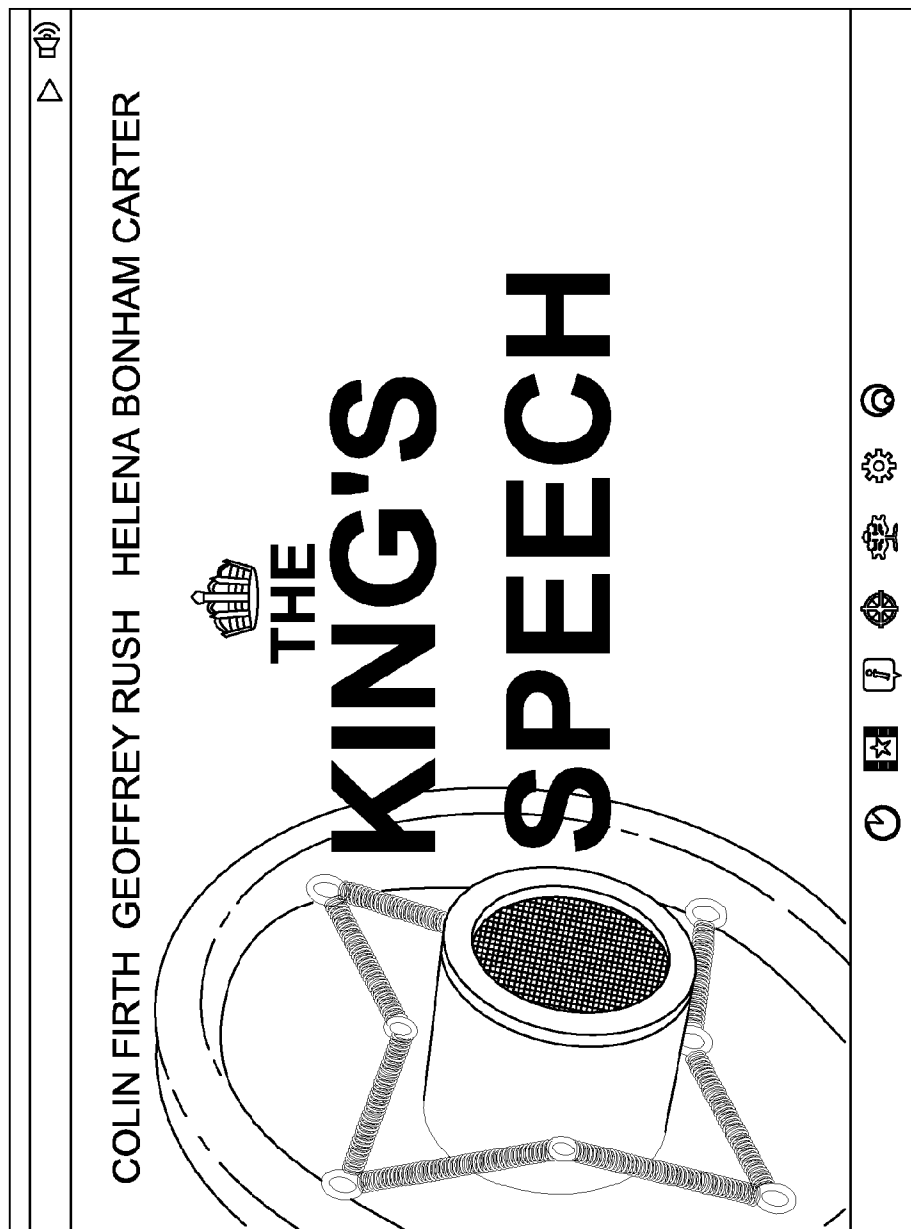


FIG. 13E

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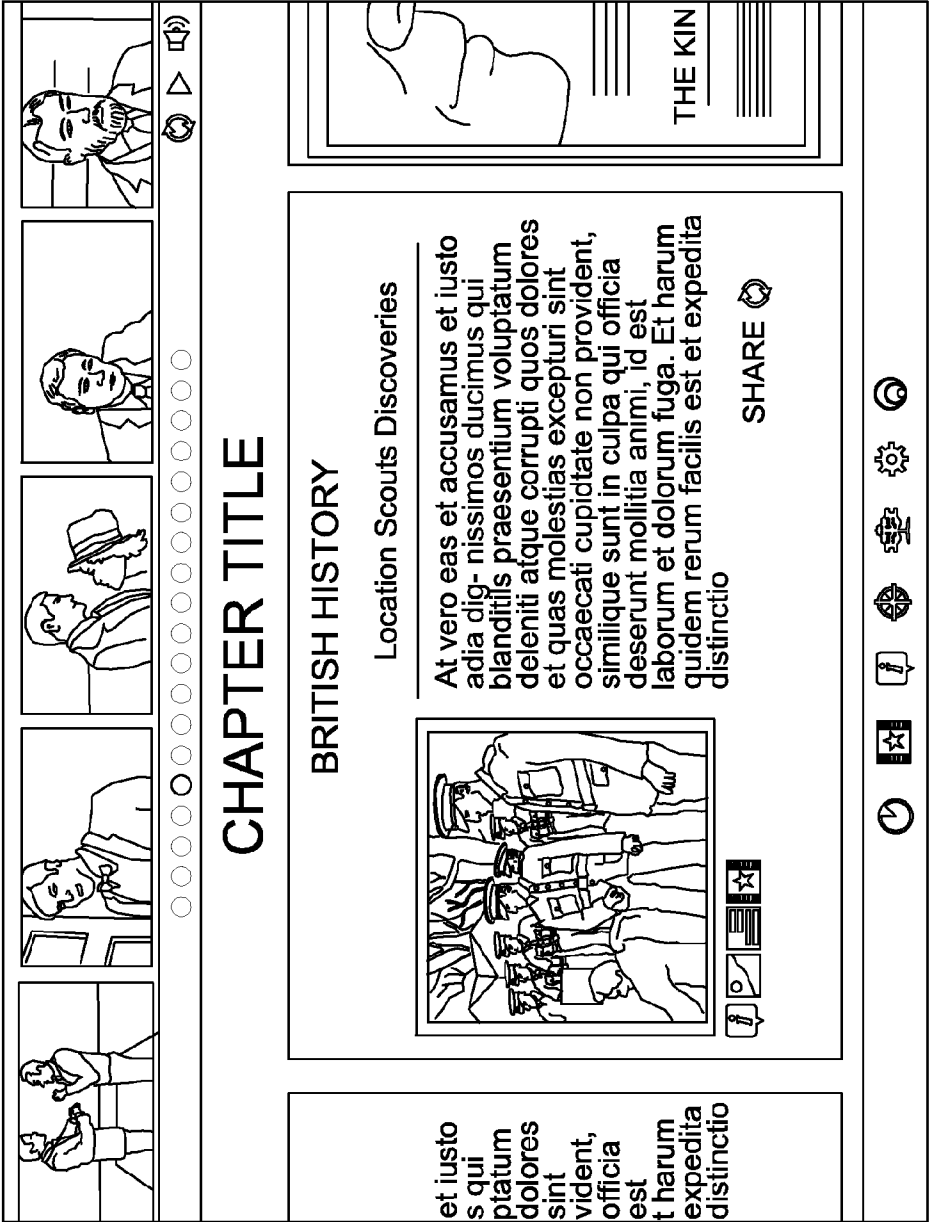


FIG. 14B

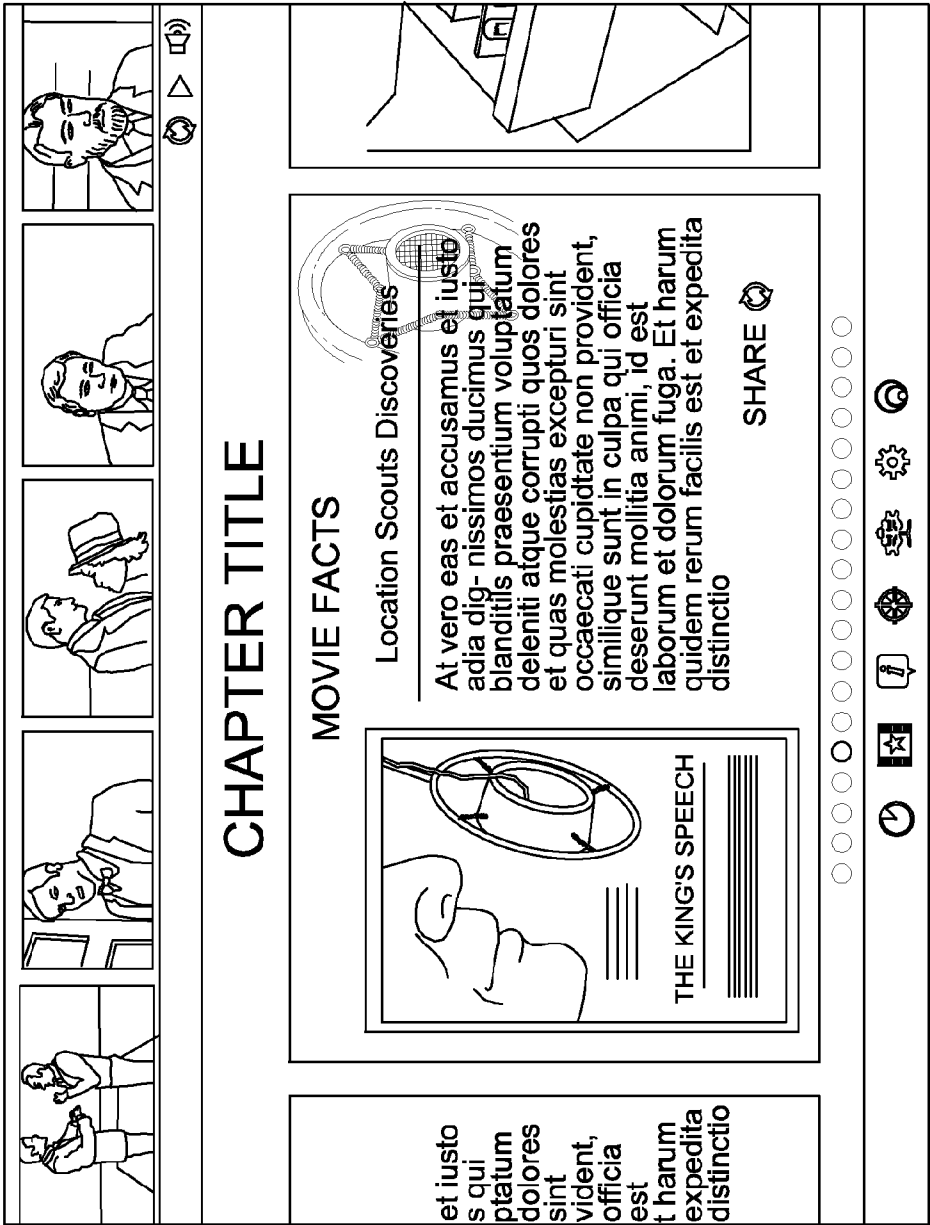
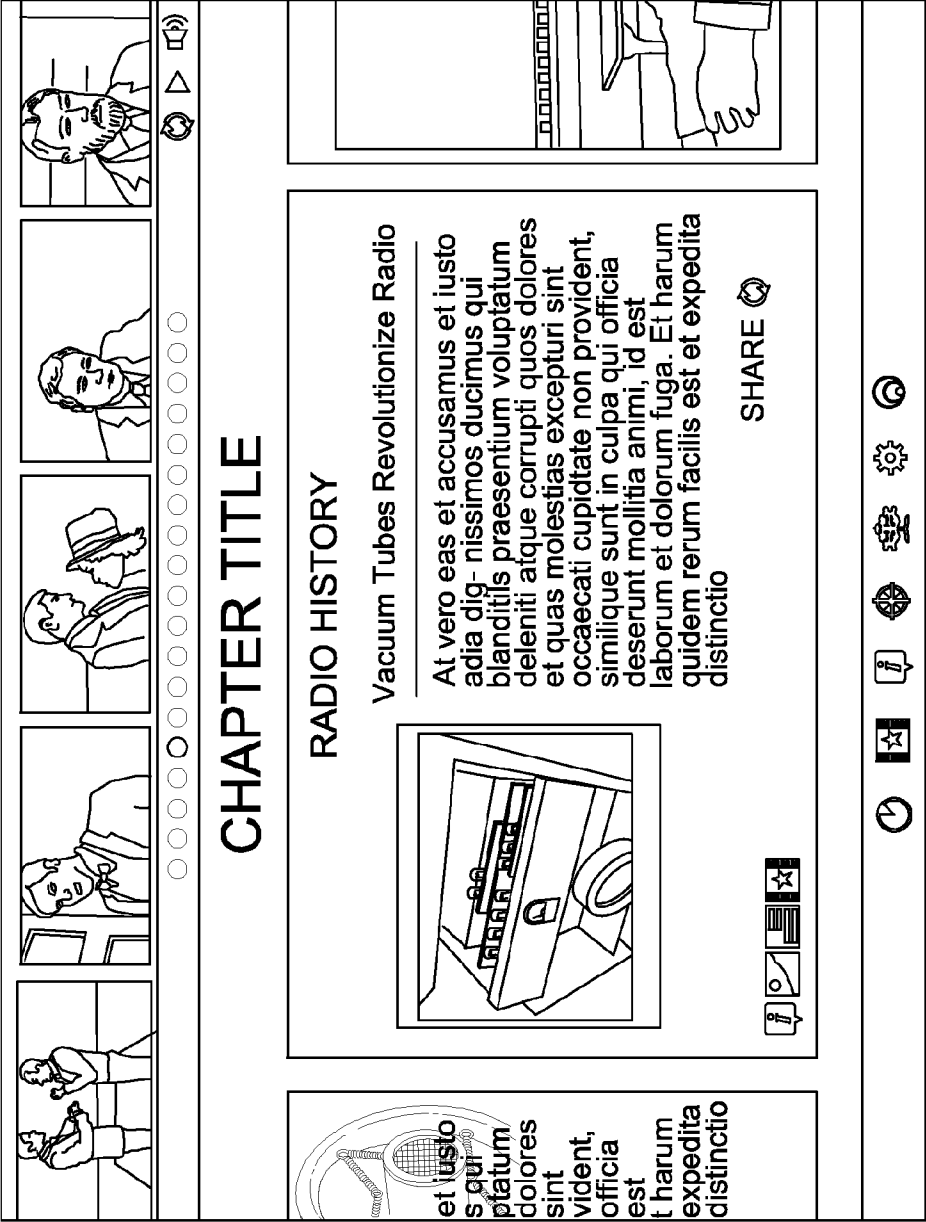


FIG. 14C



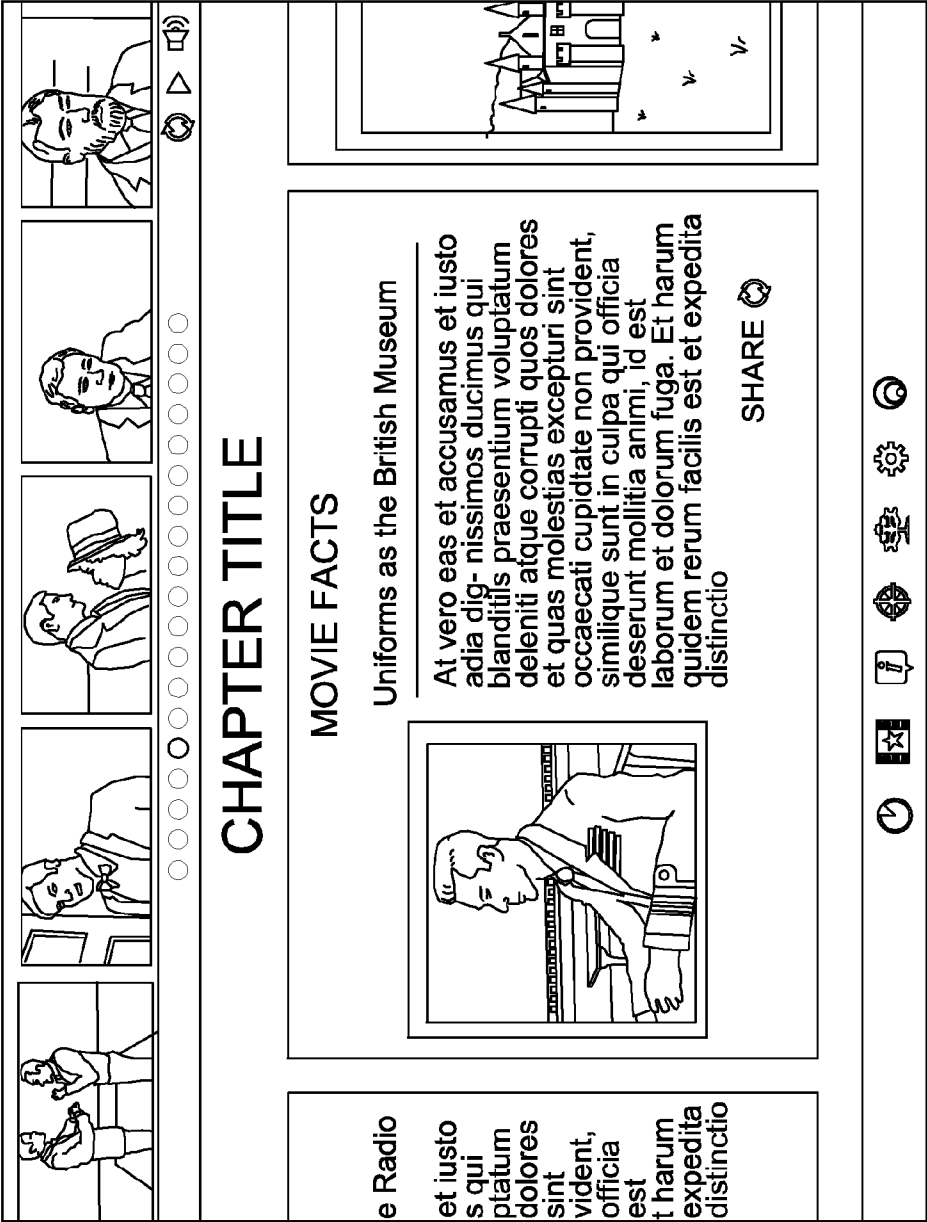


FIG. 14E

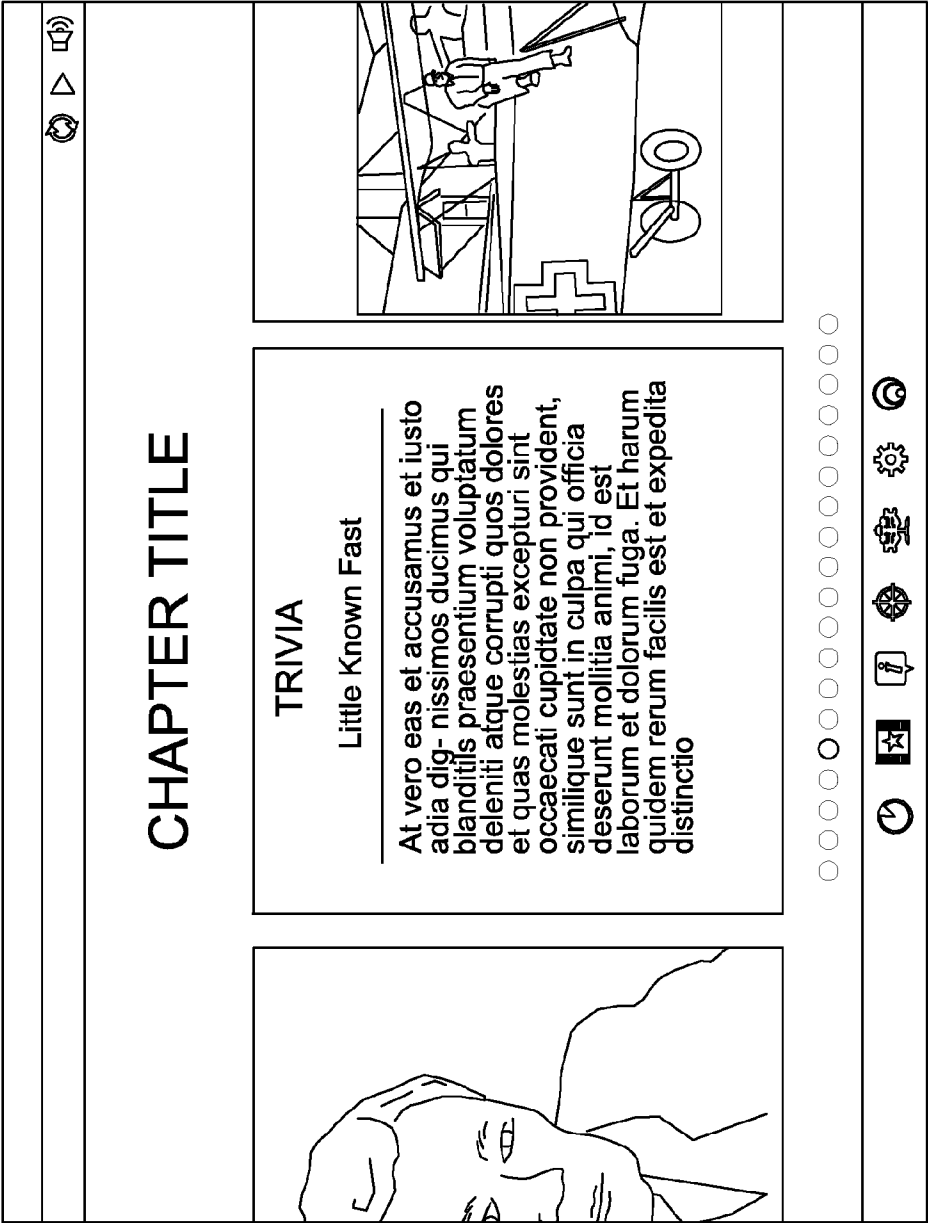
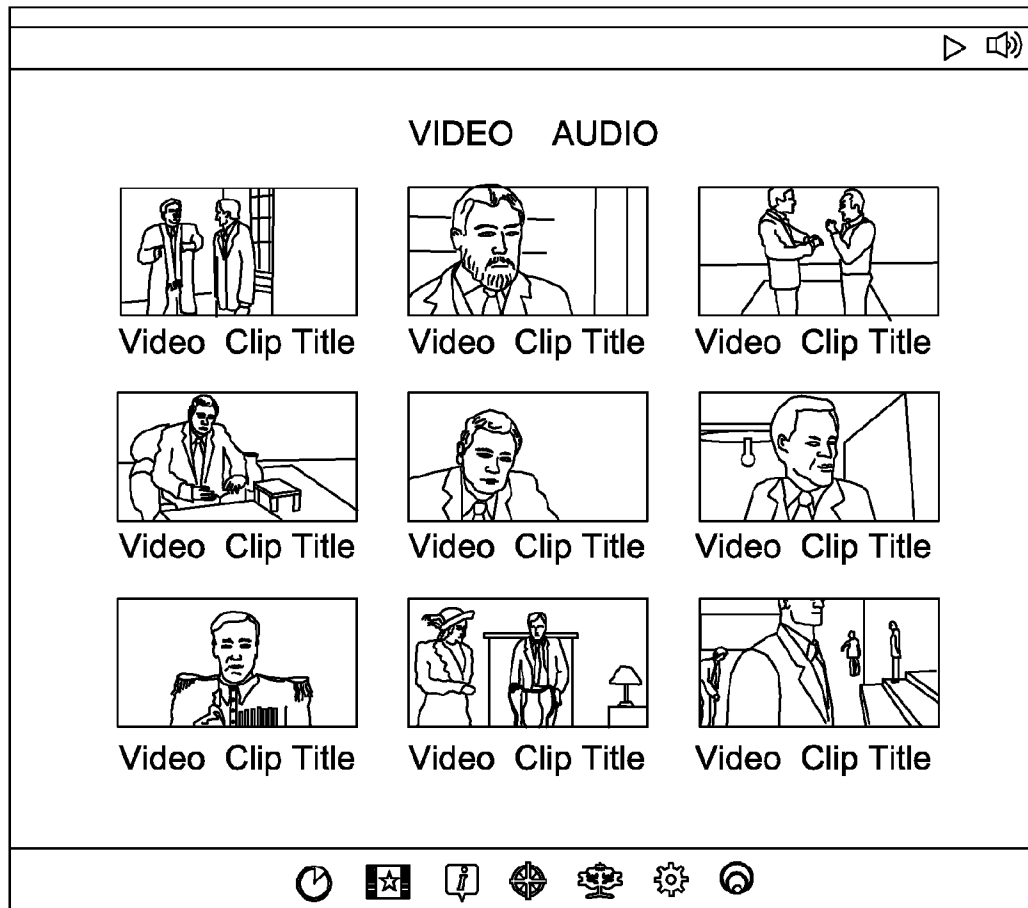
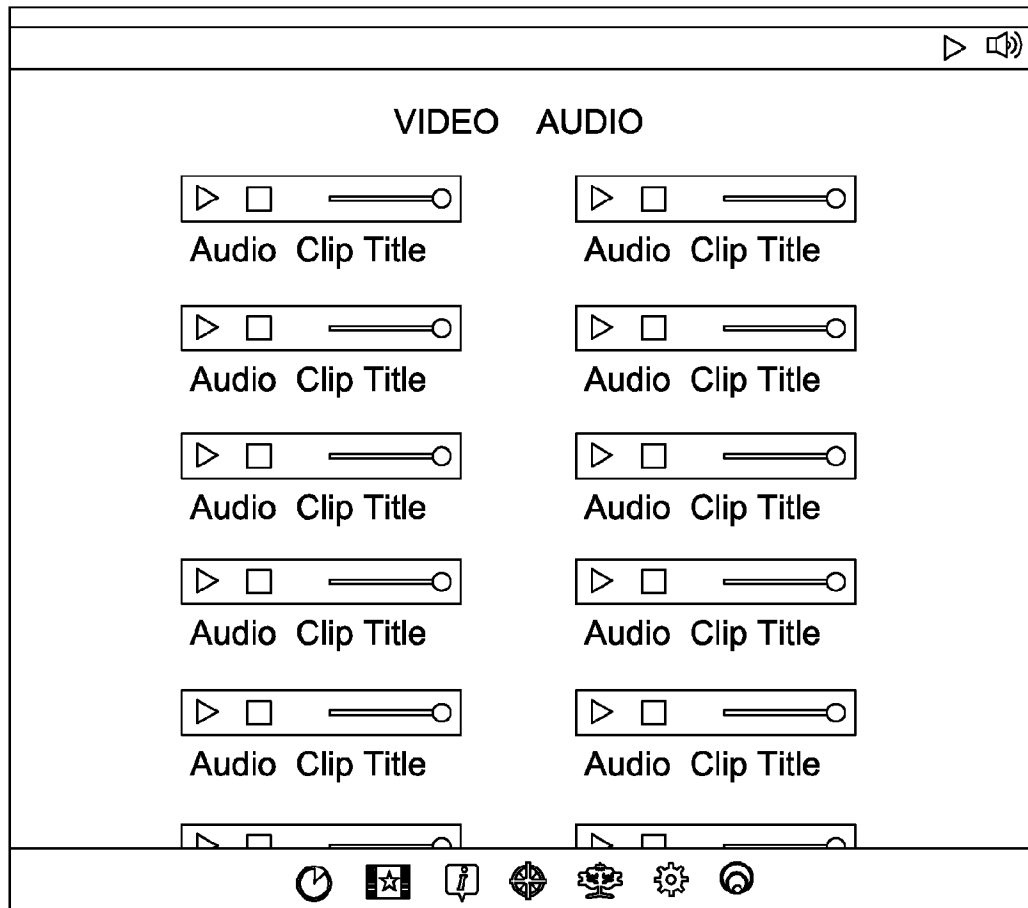


FIG. 14F

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*FIG. 14G*

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*FIG. 14H*

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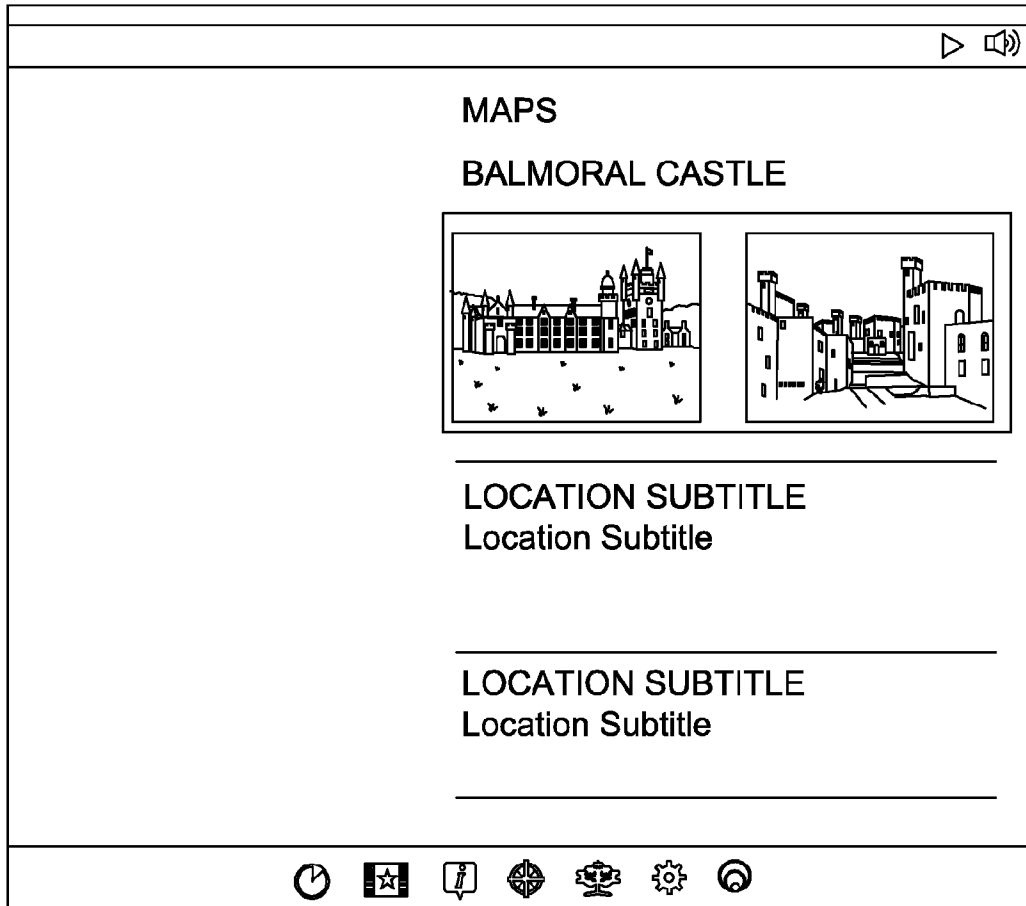
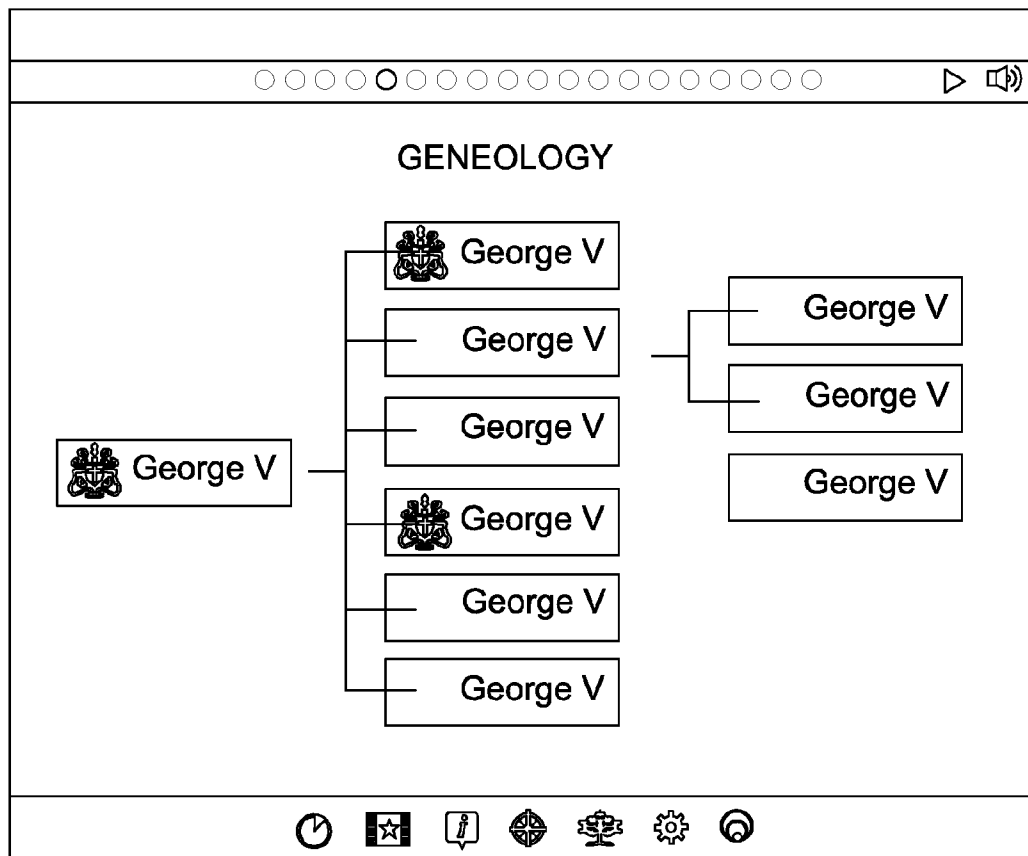


FIG. 14I

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*FIG. 14J*

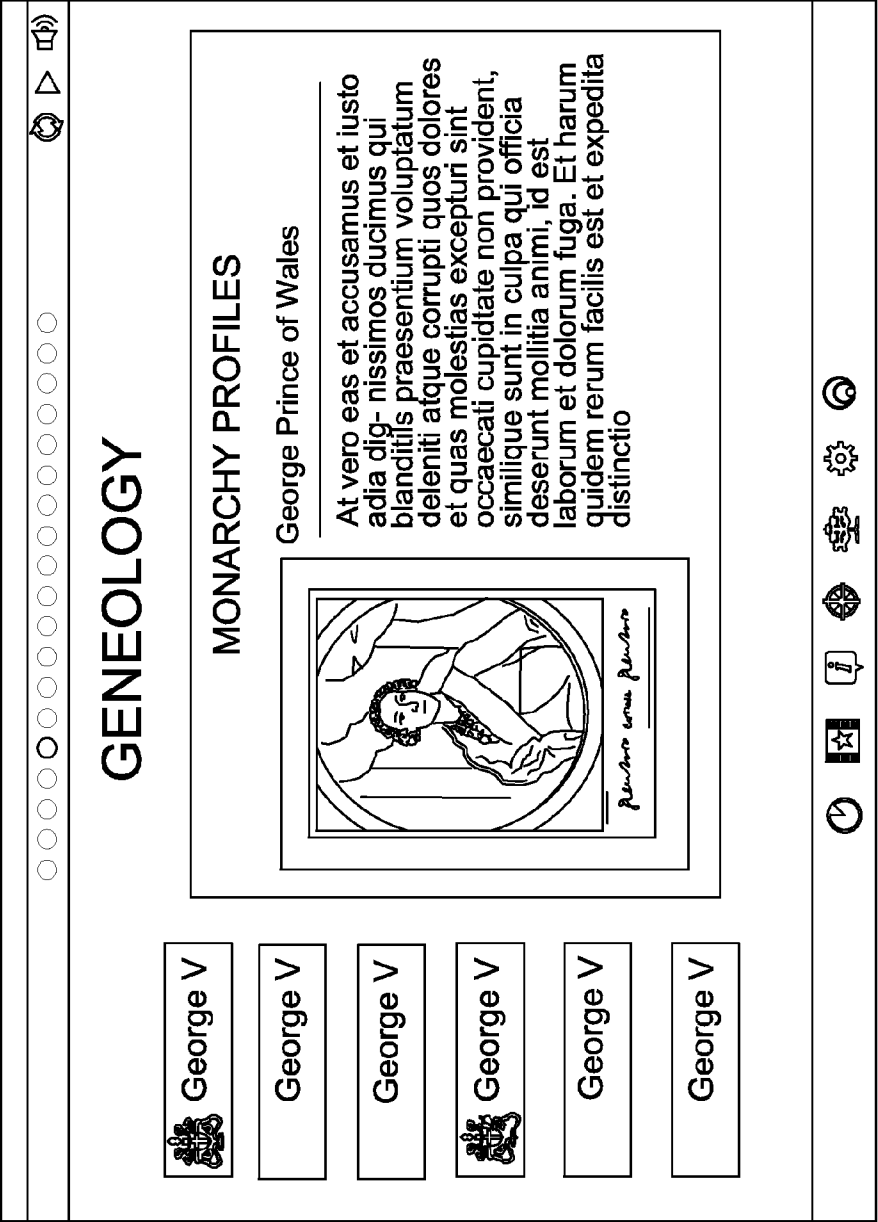


FIG. 14K

[illegible]

FIG. 14C

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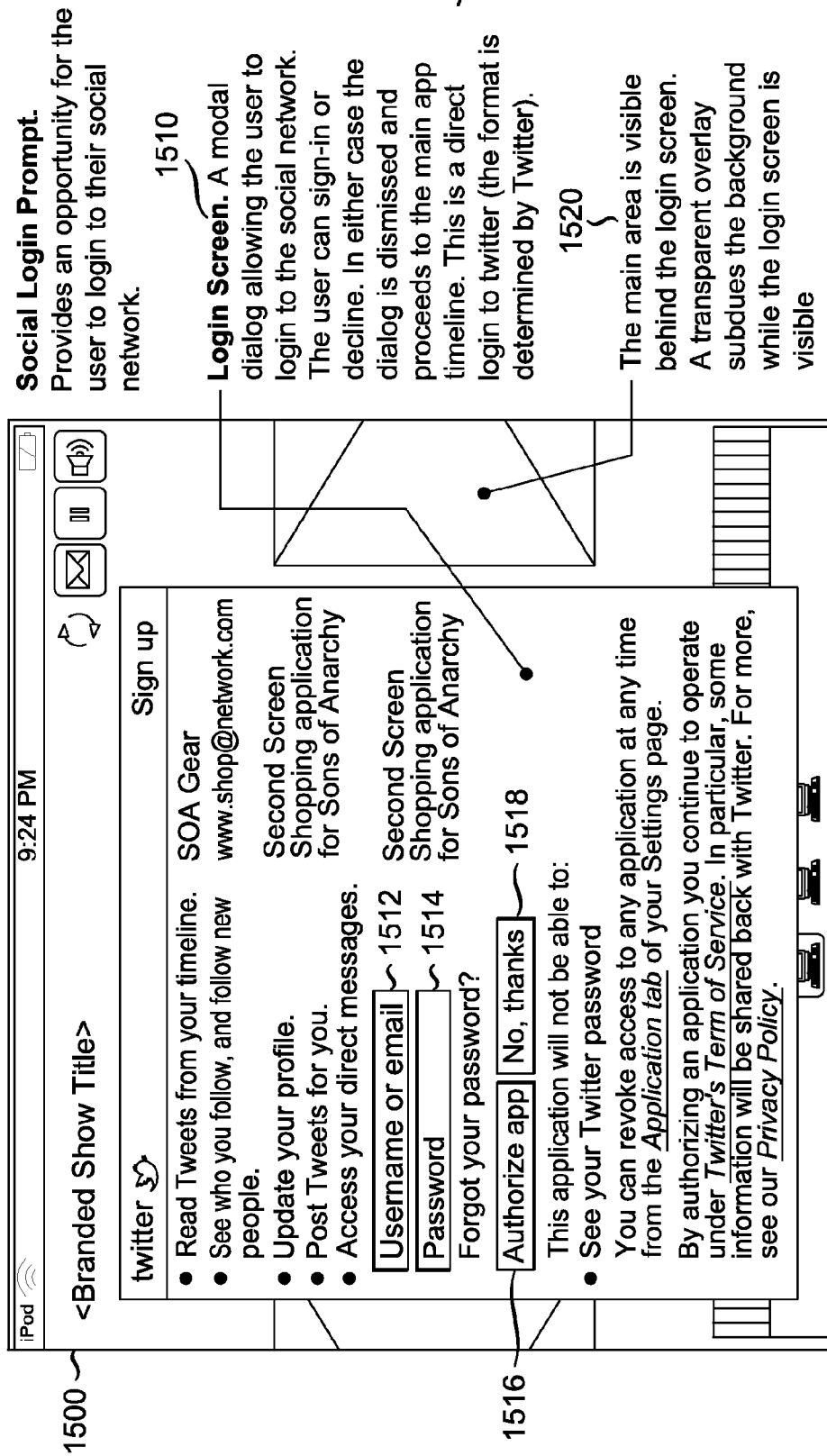
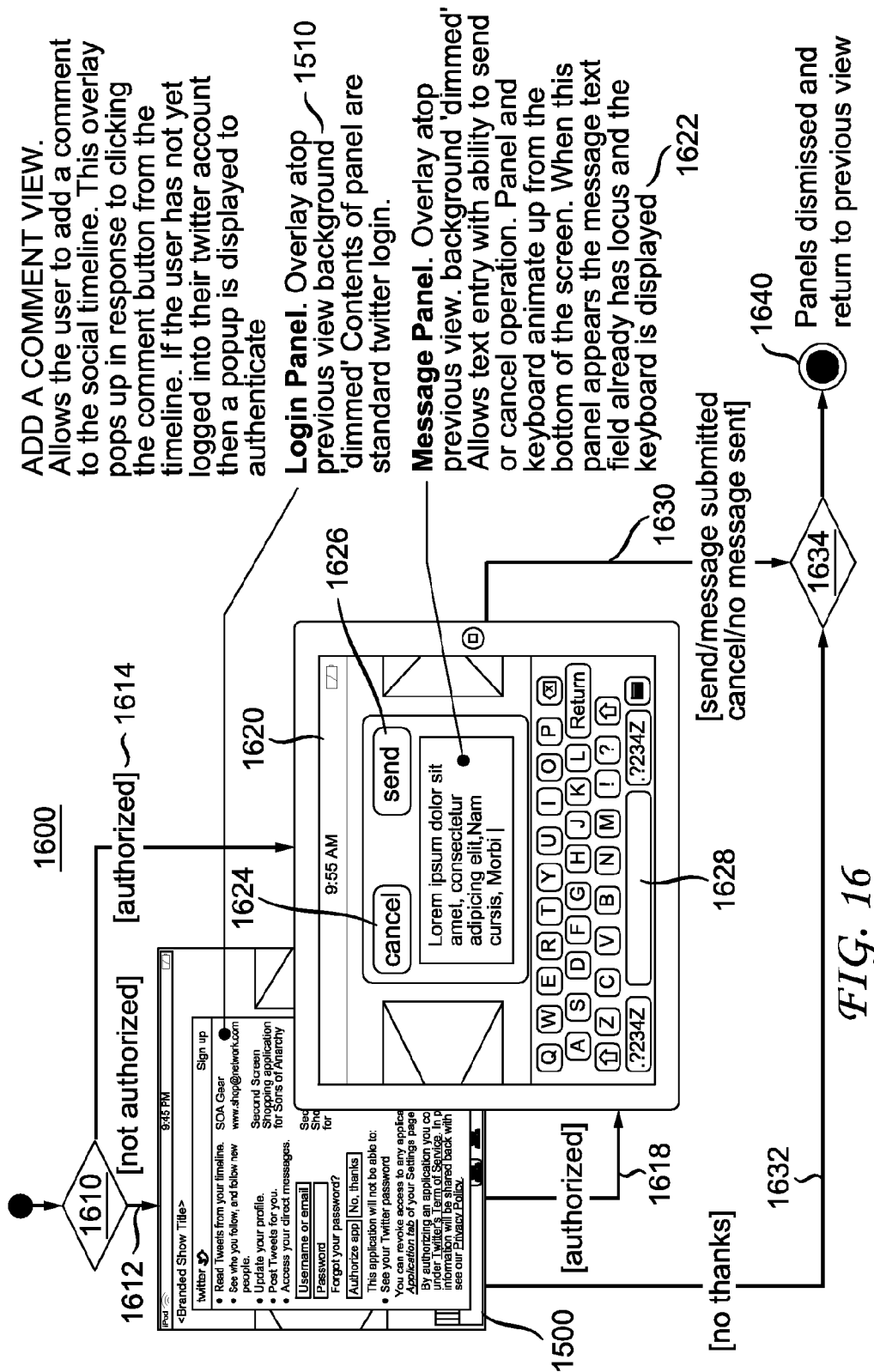


FIG. 15

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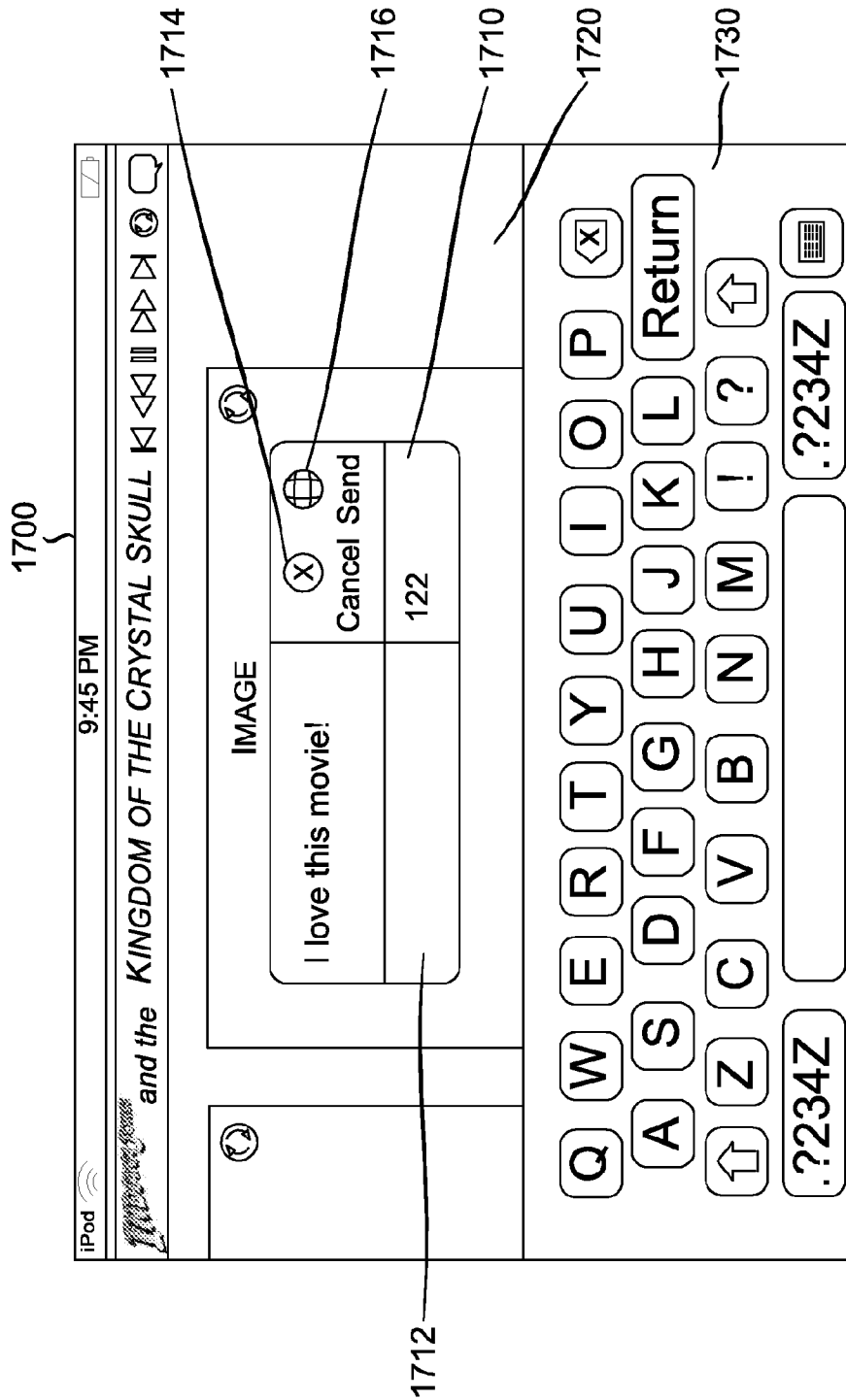
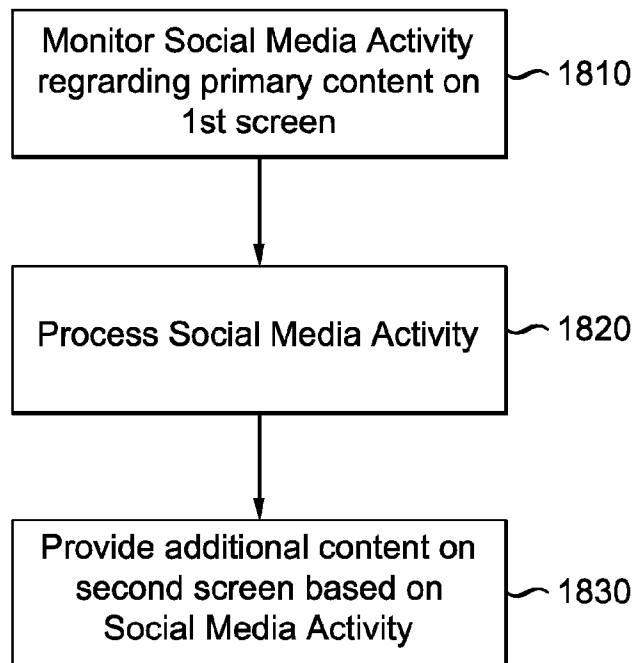
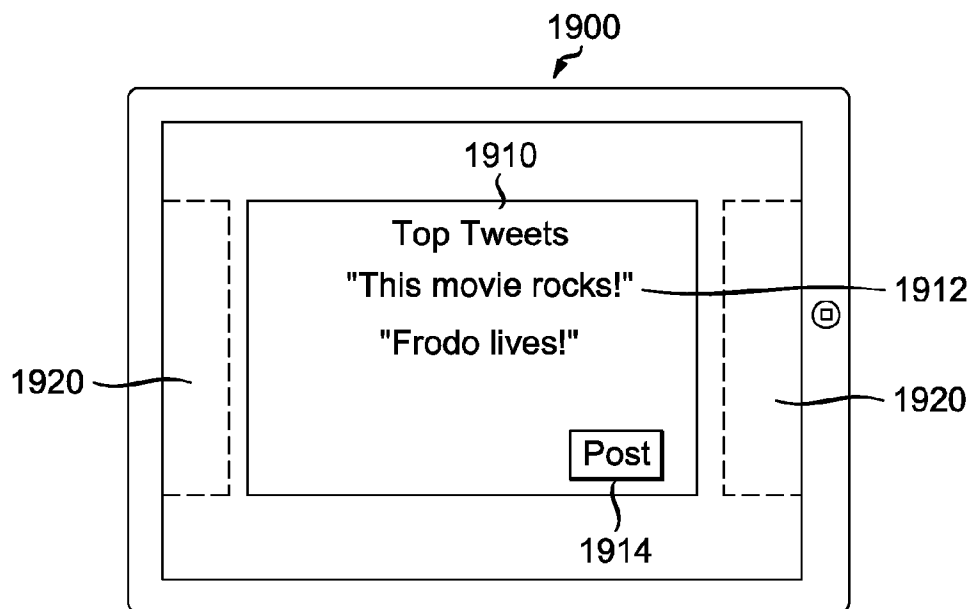
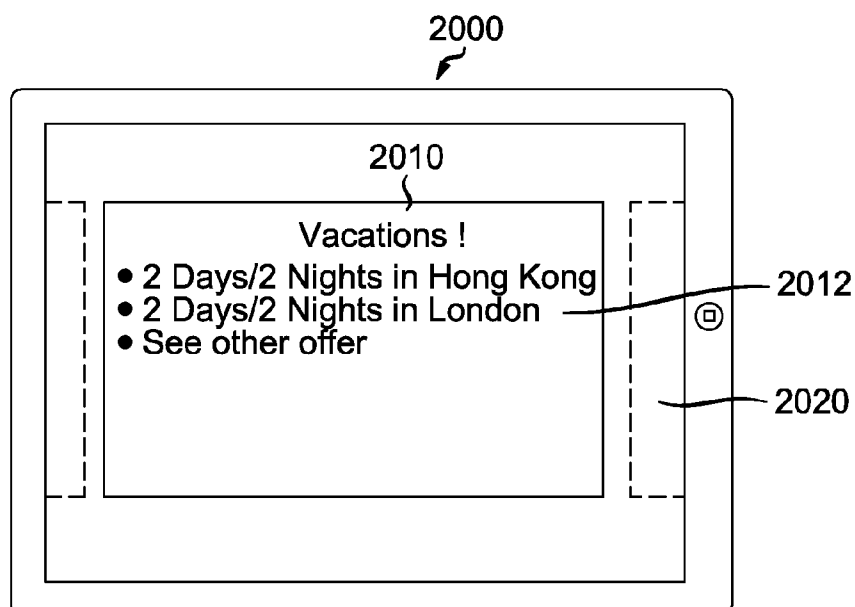


FIG. 17

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1800*FIG. 18*

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*FIG. 19**FIG. 20*

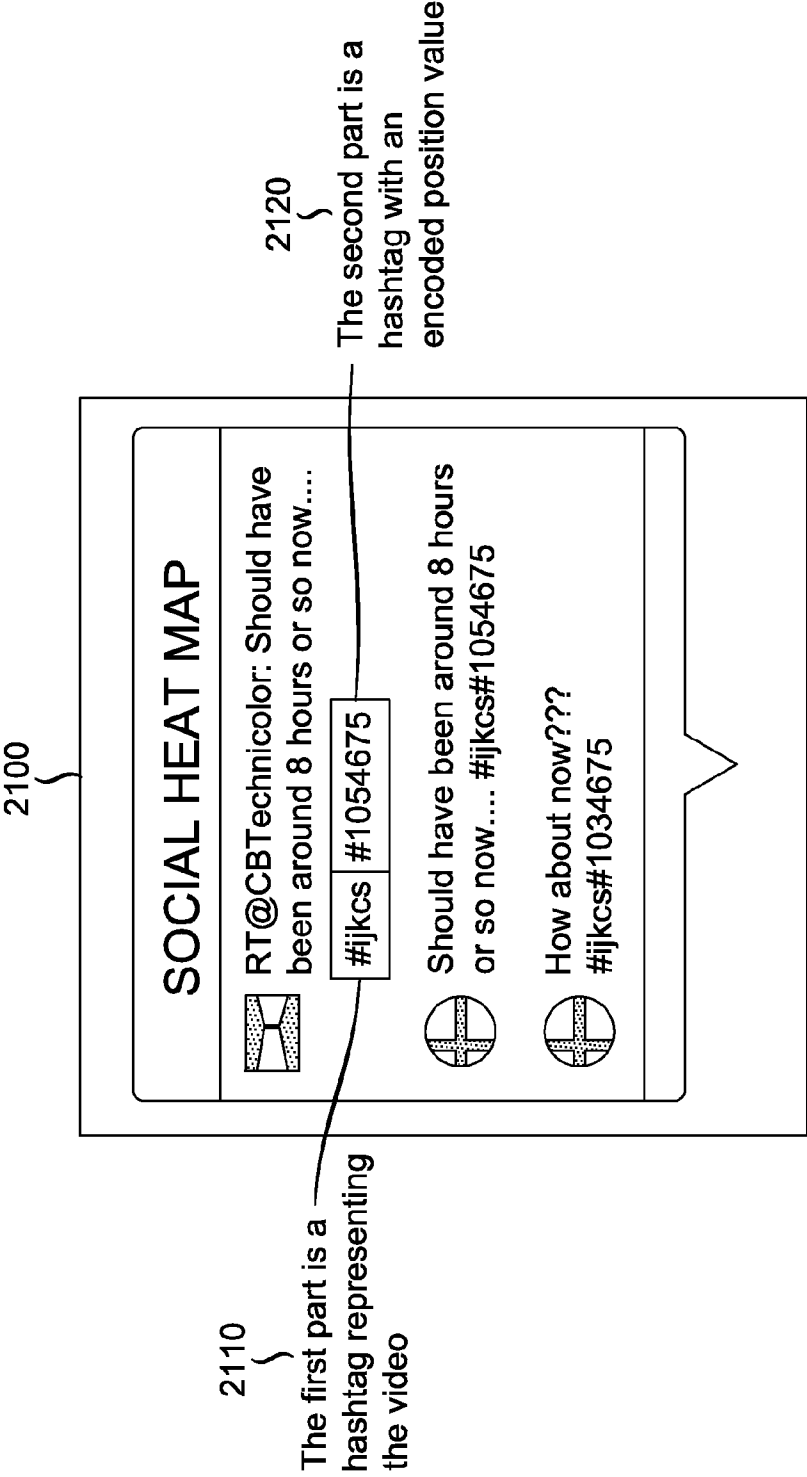
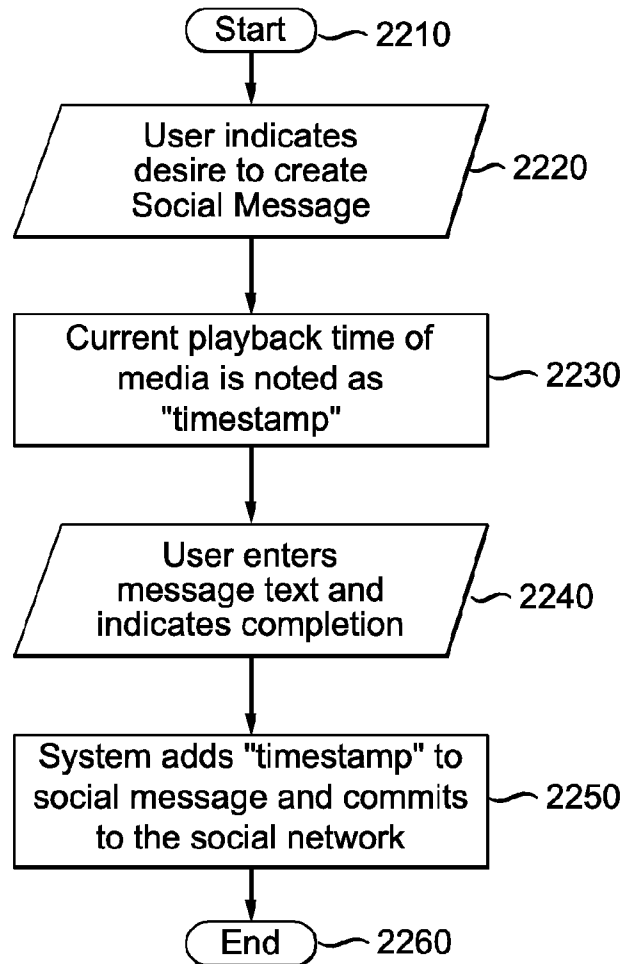


FIG. 21

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2200*FIG. 22*

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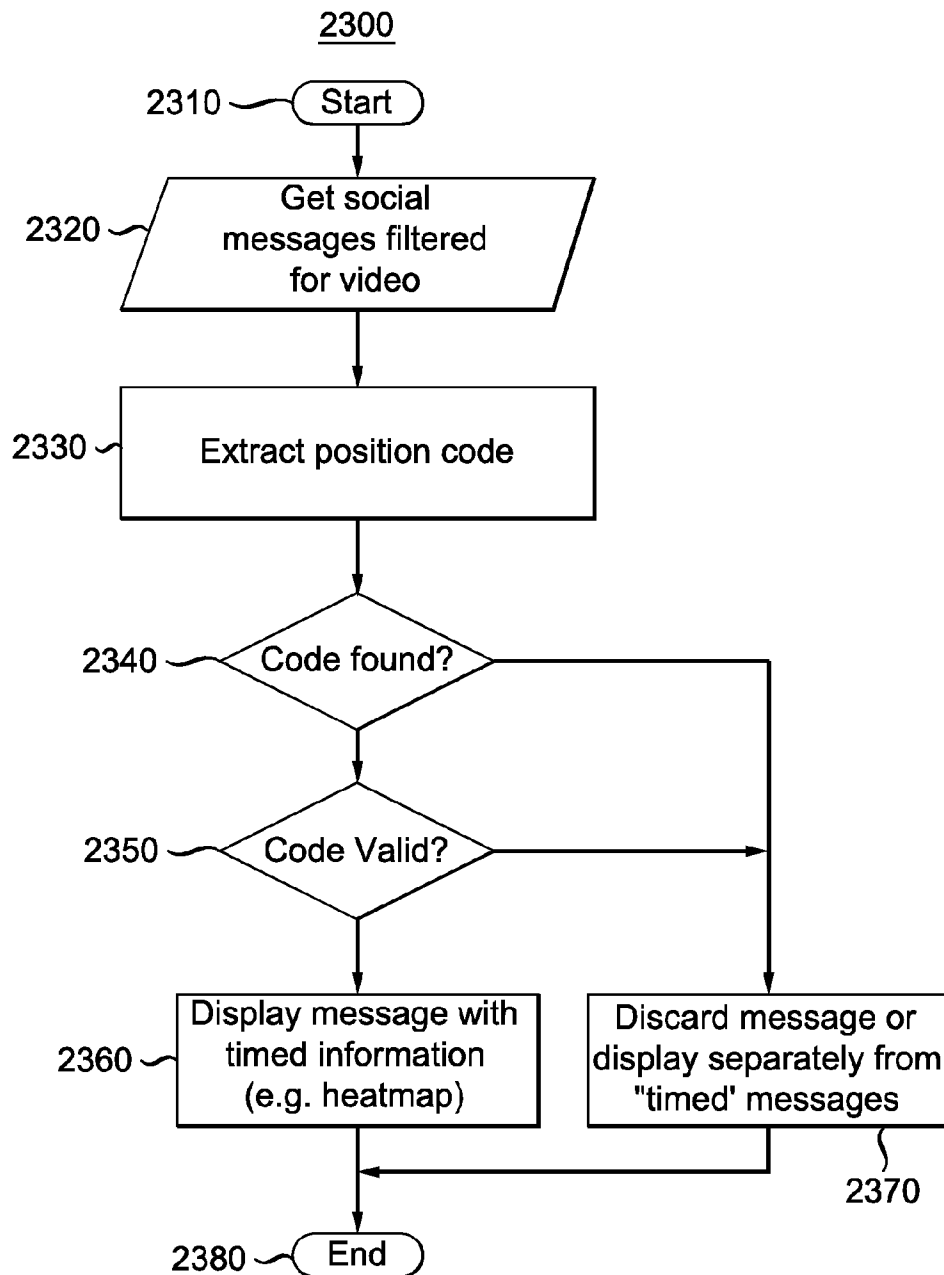
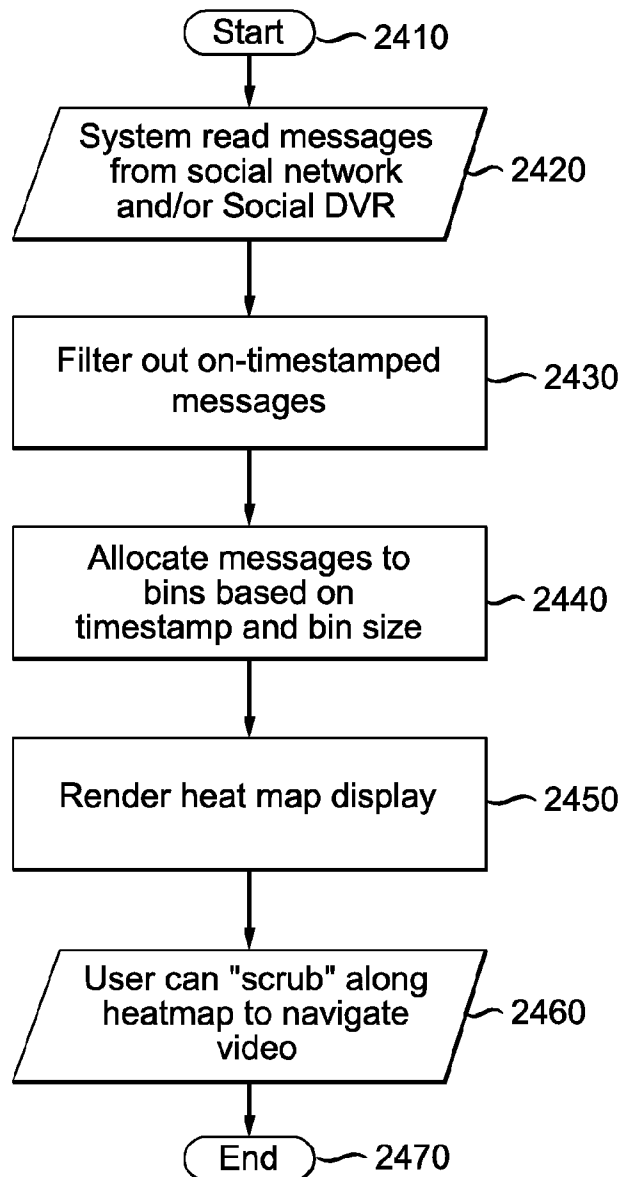
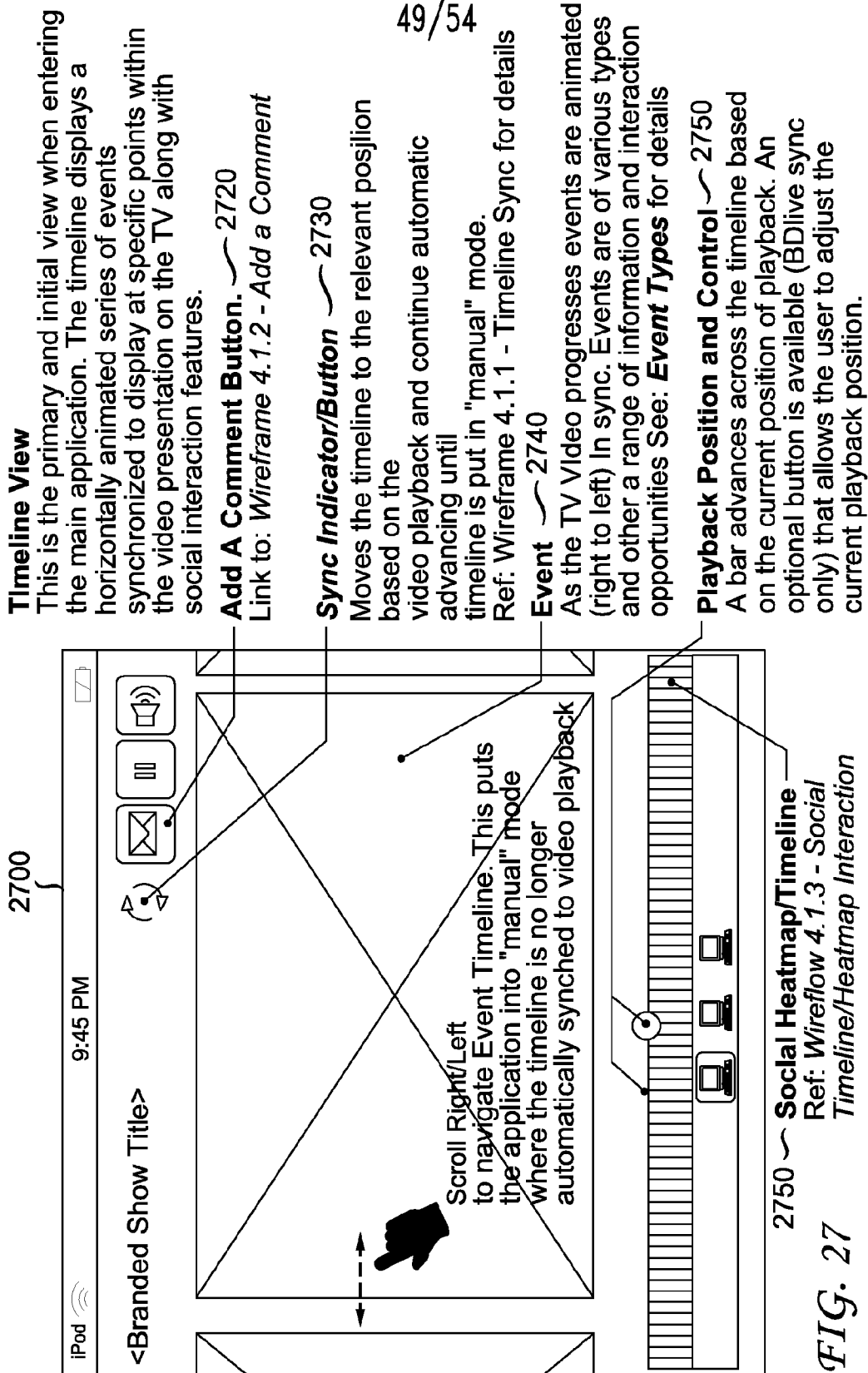


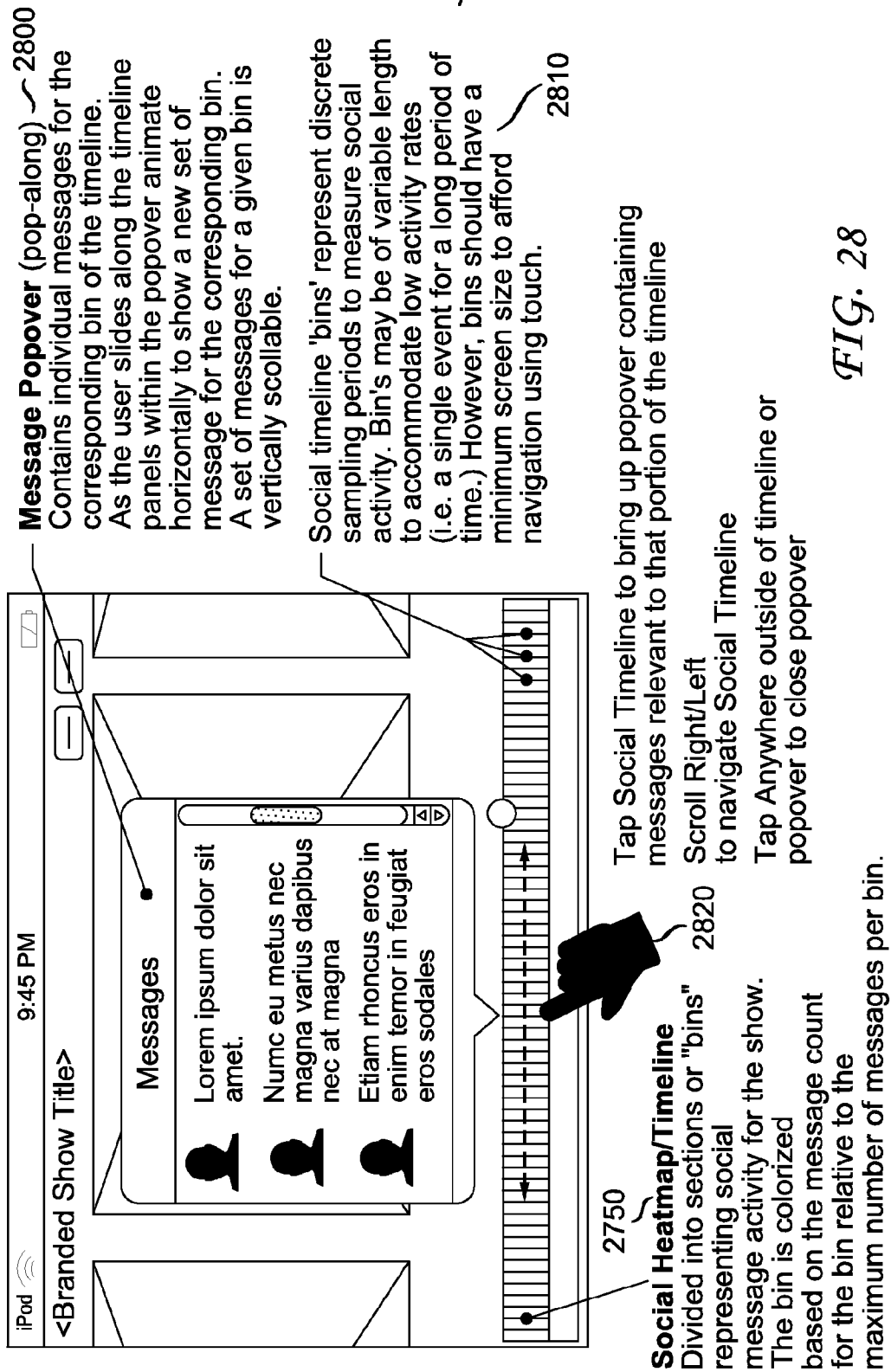
FIG. 23

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2400*FIG. 24*



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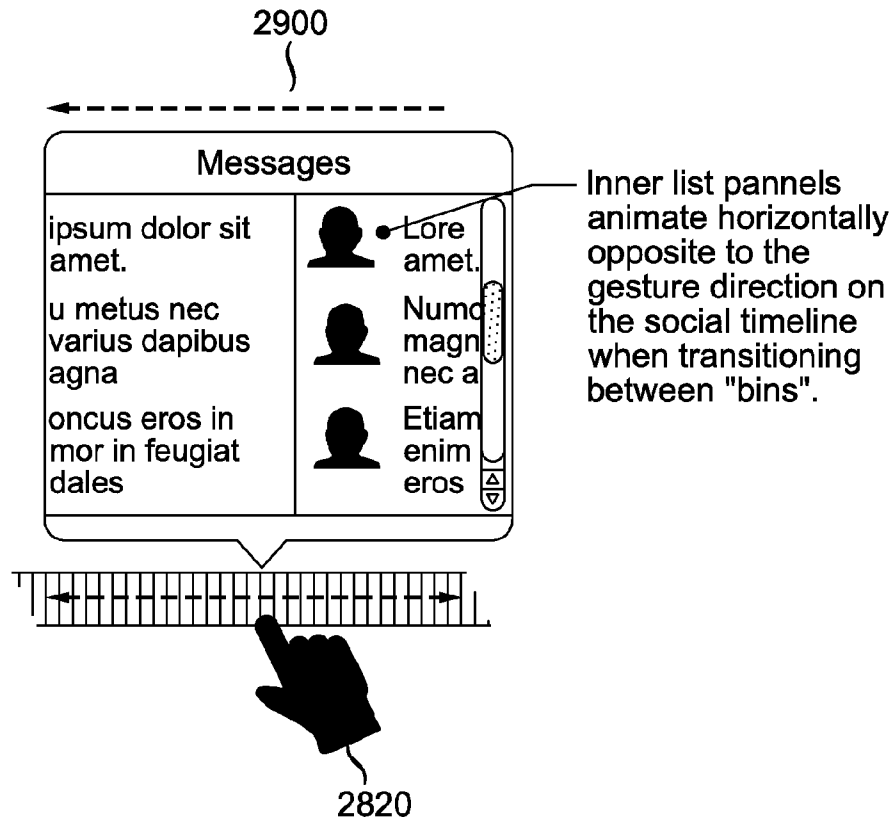


FIG. 29

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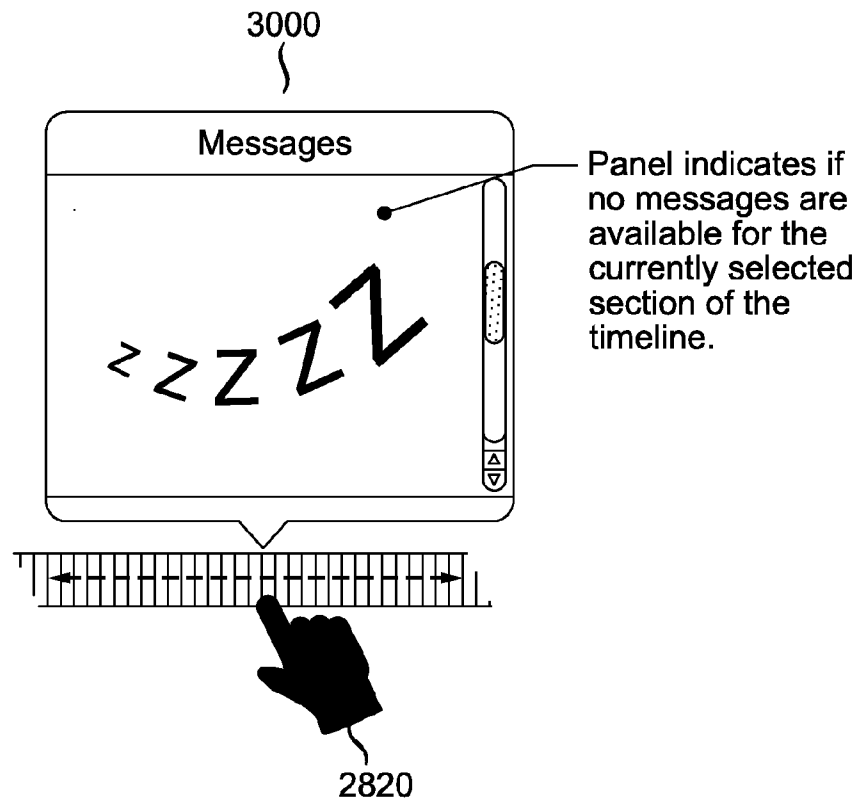


FIG. 30

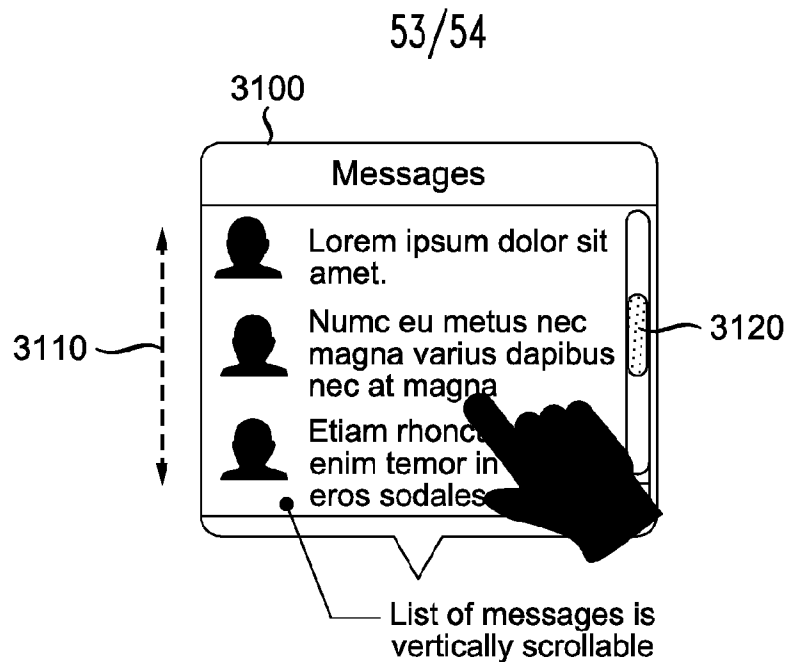


FIG. 31

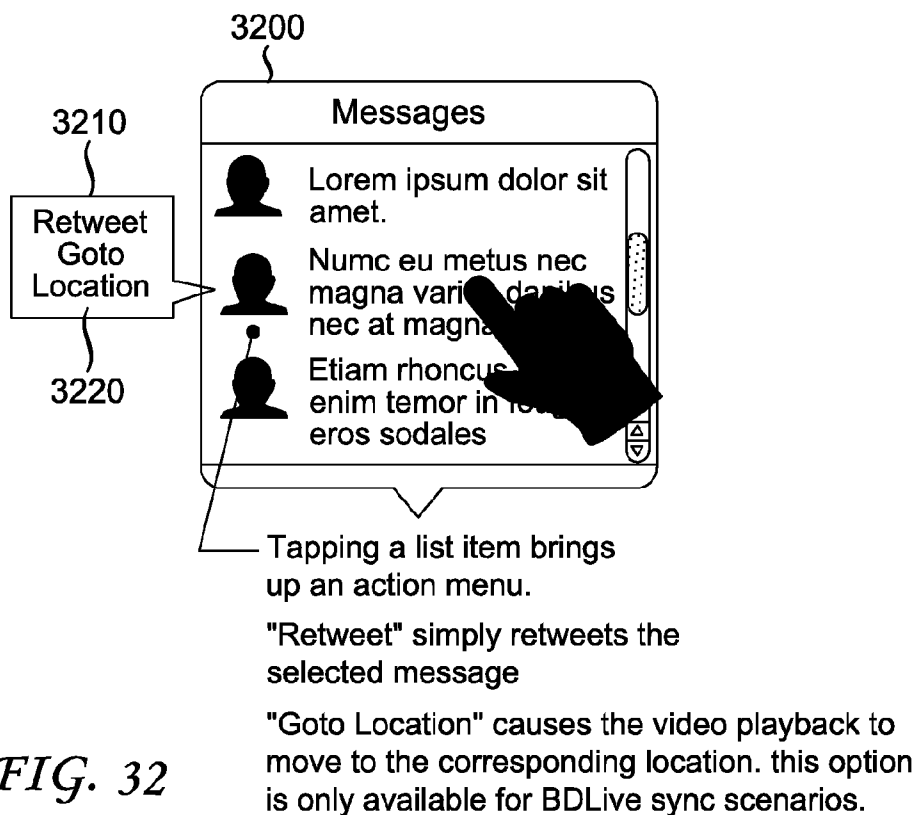


FIG. 32

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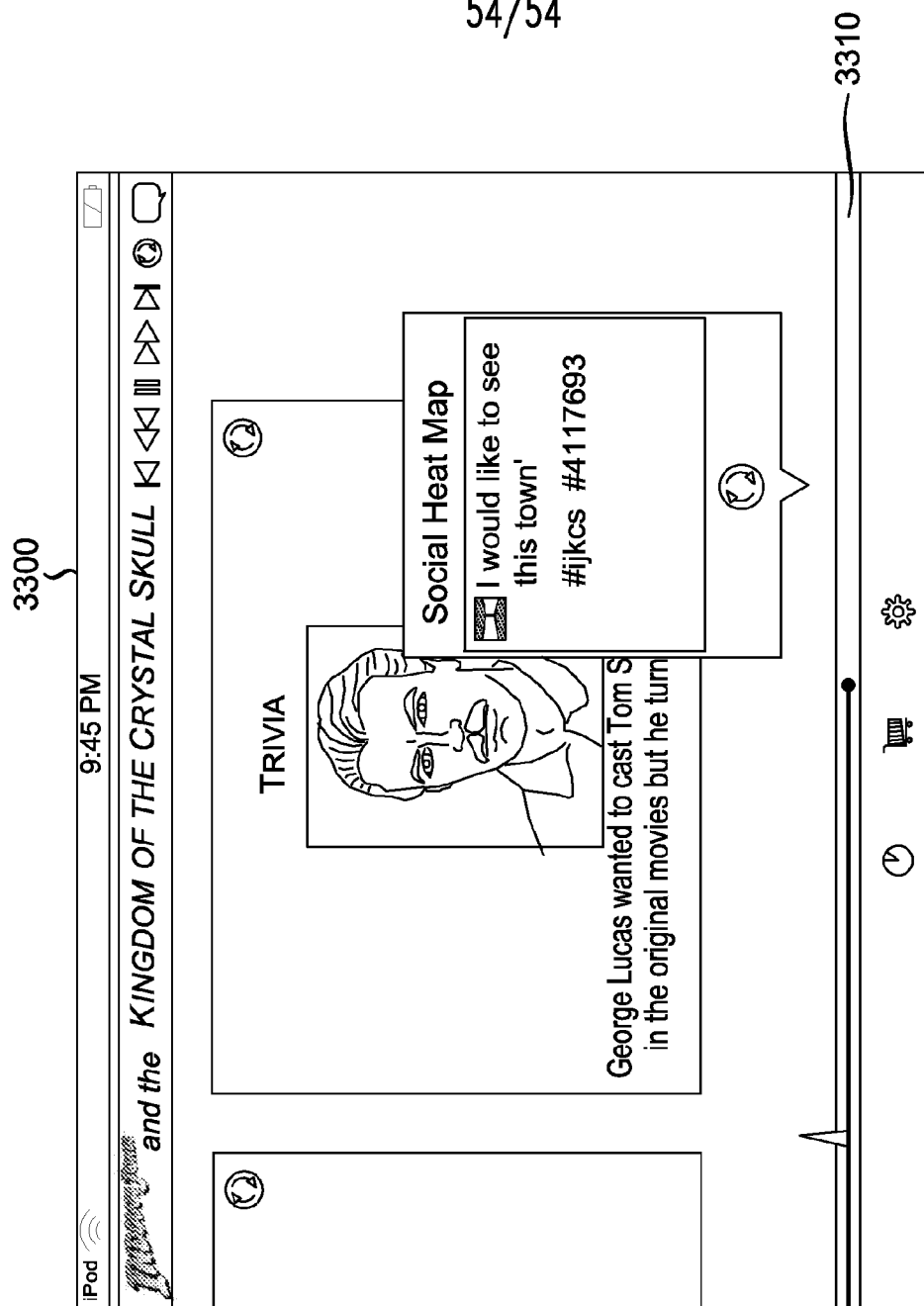


FIG. 33

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/071820

A. CLASSIFICATION OF SUBJECT MATTER

INV. H04N21/41 H04N21/4788 H04N21/81 H04N21/454 H04N21/43
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ADD.

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)

H04N G06Q H04L G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

EPO-Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Date of the actual completion of the international search

11 March 2013

Date of mailing of the international search report

19/03/2013

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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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