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(54) Title: AUTOMATICALLY SHARING A DOCUMENT WITH USER ACCESS PERMISSIONS

(57) Abstract: Inline command functionality for automatically sharing a document with user access permissions is provided. Automatic sharing of a document is performed in response to a trigger entry within the document. When a trigger entry and a user identifier entry is received, an auto-share system automatically resolves user access permissions in the background, detects sharing permissions, and shares the document with user access permissions without requiring the user who is sharing the document to manually input data. A notification is provided to the sharing user informing the user that the document is being shared, and another notification is provided to the user with whom the document is being shared including a link to the document. If the document was unintentionally shared, the sharing user is enabled to select the notification, and quickly and easily make modifications to the user access permissions for the document.

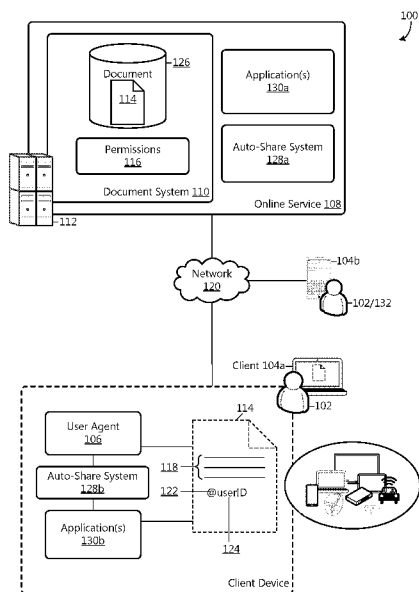


FIG. 1

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## AUTOMATICALLY SHARING A DOCUMENT WITH USER ACCESS PERMISSIONS

### BACKGROUND

5 [0001] Many documents are written collaboratively. Some online services offer online document storage and editing. Such services provide users with a document repository that may be used to store documents. Users can view and edit the documents using browser-based software, desktop applications, or mobile applications, and can save changes to the documents to the document repository. There are certain aspects to online  
10 document services that can make these services cumbersome to use for collaboration, such as when sharing a document with another user who does not have user access permissions. For example, current techniques are not seamless and interrupt the sharing user's workflow by requiring the sharing user to perform a number of steps to enable sharing of a document with another user when the other user does not have user access permissions. As can be  
15 appreciated, this can be cumbersome to the sharing user and reduces user interaction efficiency and degrades user interaction performance.

### SUMMARY

[0002] This summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description section. This summary is  
20 not intended to identify key features or essential features of the claimed subject matter, nor is it intended as an aid in determining the scope of the claimed subject matter.

[0003] Aspects are directed to an automated system, method, and device for providing inline command functionality for automatically sharing a document with user access permissions. For example, user interaction efficiency is increased and user  
25 interaction performance is improved by providing an auto-share system and method for enabling a user to seamlessly share a document with user access permissions with another user with whom the document is not shared.

[0004] In an example, automatic sharing of a document with user access permissions is performed in response to a trigger entry within the document. When a trigger entry  
30 associated with a user identifier is received, for example, in a document canvas or in a comment, an auto-share system automatically resolves user access permissions in the background, detects sharing permissions, and shares the document with user access permissions without requiring the user who is sharing the document to manually input data. For example, the sharing user is enabled to share the document with another person without

disruption to his/her workflow.

[0005] When a document is shared with another user, a notification is provided to the user sharing the document informing the user that the document is being shared, and another notification is provided to the user with whom the document is being shared with a  
5 link to the document and a notification that he/she was mentioned in the document. If the document was unintentionally shared, the sharing user is enabled to select the notification, and quickly and easily make modifications to the user access permissions for the document.

[0006] Examples are implemented as a computer process, a computing system, or as an article of manufacture such as a device, computer program product, or computer  
10 readable media. According to an aspect, the computer program product is a computer storage media readable by a computer system and encoding a computer program of instructions for executing a computer process.

[0007] The details of one or more aspects are set forth in the accompanying drawings and description below. Other features and advantages will be apparent from a  
15 reading of the following detailed description and a review of the associated drawings. It is to be understood that the following detailed description is explanatory only and is not restrictive of the claims.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The accompanying drawings, which are incorporated in and constitute a part  
20 of this disclosure, illustrate various aspects. In the drawings:

**FIGURE 1** is a simplified block diagram showing components of an example system for providing inline command functionality for automatically sharing a document with user access permissions;

**FIGURE 2A** is an illustration of an example user interface display showing  
25 user input on a document page including a trigger entry and a user identifier entry for automatically sharing a document;

**FIGURE 2B** is an illustration of an example user interface display showing user input in a comment including a trigger entry and a user identifier entry for automatically sharing a document;

**FIGURE 2C** is an illustration of an example user interface display including  
30 a notification for informing the sharing user that the document is being shared;

**FIGURE 2D** is an illustration of an example user interface display including a share pane for enabling the sharing user to modify user access permissions;

**FIGURE 3A** is an illustration of an example user interface display including

a notification that includes a functionality for enabling the sharing user to upload the document to the document system;

**FIGURE 3B** is an illustration of an example user interface display including a notification that includes a functionality for enabling the sharing user to select an online storage location for uploading the document to the document system;

**FIGURE 3C** is an illustration of an example user interface display including a notification for informing the sharing user that the document is being uploaded to an online storage location and will be shared with a mentioned user;

**FIGURE 4** is a flow chart showing general stages involved in an example method for providing inline command functionality for automatically sharing a document with user access permissions;

**FIGURE 5** is a block diagram illustrating example physical components of a computing device;

**FIGURES 6A** and **6B** are simplified block diagrams of a mobile computing device; and

**FIGURE 7** is a simplified block diagram of a distributed computing system.

#### DETAILED DESCRIPTION

**[0009]** The following detailed description refers to the accompanying drawings. Wherever possible, the same reference numbers are used in the drawings and the following description refers to the same or similar elements. While examples may be described, modifications, adaptations, and other implementations are possible. For example, substitutions, additions, or modifications may be made to the elements illustrated in the drawings, and the methods described herein may be modified by substituting, reordering, or adding stages to the disclosed methods. Accordingly, the following detailed description is not limiting, but instead, the proper scope is defined by the appended claims. Examples may take the form of a hardware implementation, or an entirely software implementation, or an implementation combining software and hardware aspects. The following detailed description is, therefore, not to be taken in a limiting sense.

**[0010]** Aspects of the present disclosure are directed to a method, system, and computer storage media for providing inline command functionality for automatically sharing a document with user access permissions. Automatic sharing of a document with user access permissions is performed in response to receiving user input including a trigger entry and a user identifier entry within the document. Among other benefits, the disclosed technology enables users to continue with their workflow, while an auto-share system

automatically resolves user access permissions in the background, and shares the document with a referenced user without interrupting the sharing user. Advantageously, the inline command functionality allows the user to continue working in the application throughout the permission-checking and automatic sharing so that the user's concentration is not broken  
5 by having to confirm sharing the document with a mentioned user or to manually share the document. In some aspects, the auto-share system is configured to process the inline auto-share command in the background while the application continues to receive textual input from the user. Additionally, in some aspects, multiple active inline auto-share commands may be processed simultaneously.

10 **[0011]** With reference now to **FIGURE 1**, a simplified block diagram illustrating aspects of an example system **100** for providing automatic sharing of a document via a mention. The example system **100** includes an online service **108**, illustrative of portal-based computing system for creating, managing and sharing electronic documents. In some examples, the online service **108** is located on a server **112**, such as a shared resources server  
15 located at an enterprise accessible by various clients **104a,b** (collectively, **104**). In other examples, the server **112** is a shared resources server remotely located from the various clients **104**. According to an aspect, the online service **108** includes a document system **110** operative to provide document storage and/or editing of documents **114**. In one example, the document system **110** provides one or more online applications **130a** to view, generate, and edit electronic documents **114**. According to an aspect, the document system **110**  
20 comprises a local or remote storage repository **126** at which the one or more electronic documents **114** are stored.

**[0012]** Electronic documents **114** stored in the storage repository **126** may be associated with various types of user access permissions **116**. According to an example,  
25 the user access permissions **116** are stored in the document system **110**. User access permissions **116** indicate the extent to which a user may edit an electronic document **114**. In one example, the user access permissions **116** indicate that an electronic document **114** is public and can be opened and/or edited by anyone. In another example, user access permissions **116** list specific users who may read and/or edit a given document.

30 **[0013]** Example user access permissions **116** include one or more of: full control, read/write, review only, comment only, read only and no access. Other user access permissions **116** may be possible. According to an example, when a client user is assigned full control, the user has full read/write access to the document **114** and can change the formatting of the document. When a client user has read/write control, the user has read-

write permission to the document **114**, but cannot make formatting changes. With review only permission, a client user can make changes to the document **114** that are tracked via a track changes technology. With comment only permission, a client user can insert comments into the document **114**, but cannot alter content of the document. With read only permission, a client user can view the document **114**, but cannot make any changes to it and cannot insert any comments. In some examples, user access permissions **116** can be enforced without network connectivity. For example, assigned user access permissions to a document **114** can be cached in the client's application **130b** or stored within the document **114**. Accordingly, user access permissions **116** can be used if a client device **104** is disconnected from a network **120**.

**[0014]** Client users **102** are enabled to access the server **112** and the electronic documents **114** from a variety of client devices **104a,b** via a network **120** or combination of networks, such as, but not limited to, the Internet, wide area networks, local area networks, and combinations thereof. Examples of suitable client devices **104** include, but are not limited to, desktop computers, laptop computers, tablet computers, laptop/tablet hybrid computing devices, large screen multi-touch displays, mobile phones, personal digital assistants, wearable devices, gaming devices, connected automobiles, and smart appliances.

**[0015]** The system **100** includes one or more applications **130a,b** (generally, **130**) used to view, generate, and edit electronic documents **114**. Examples of suitable applications **130** include, but are not limited to, word processing, spreadsheet, database, slide presentation, electronic mail, drawing, note taking, web browser, media player, and game applications. In some examples, the application(s) **130** are web applications **130a** run on a server **112** and provided via an online service **108** as described above. According to an aspect, web applications communicate via the network **120** with a user agent **106**, such as a browser, executing on a client computing device **104**. The user agent **106** provides a user interface that allows a user **102** to interact with application content and electronic documents **114** stored in the storage repository **126**. The user interface is displayed on a display of the client device **104** running the user agent **106**. In some examples, the user agent **106** is a dedicated client application that provides a user interface and access to electronic documents **114** stored in the storage repository **126**. In other examples, the application(s) **130** are local applications **130b** stored and executed on the client device **104**, and provide a user interface that allows a user **102** to interact with application content and electronic documents **114** stored in the storage repository **126**.

**[0016]** A user **102** may use an application **130** to create a new document **114** or to

edit an existing document **114**. In examples, the application **130** receives input from the user, such as text input, drawing input, etc., via various input methods, such as those relying on mice, keyboards, and remote controls, as well as Natural User Interface (NUI) methods, which enable a user to interact with a device in a “natural” manner, such as via speech  
5 recognition, touch and stylus recognition, gesture recognition both on screen and adjacent to the screen, air gestures, head and eye tracking, voice and speech, vision, touch, hover, gestures, and machine intelligence. The user input results in content **118** being added to the document **114**. In some examples, content **118** is added within a document canvas (e.g., a page in a word processing document, a spreadsheet in a spreadsheet document, a slide in a  
10 presentation document). In other examples, content **118** is added in a comment. According to an aspect, the received user input includes a trigger entry **122** corresponding to an inline command. For example, the trigger entry **122** may operate as a signal to perform a particular action or sequence of actions.

**[0017]** As an example, a trigger entry **122** is associated with an auto-share  
15 command, that when successfully completed, automatically shares the document **114** with user access permissions **116** to an identified user. For example, a user **102** may enter the following input: “@John Doe.” As the application **130** receives the input, the input is directed onto a page of the document **114** or into a comment in the document at least until a complete trigger entry has been received. In this example, the trigger entry **122** is “@”.  
20 Upon receiving the “@,” the application **130** may determine that a trigger entry **122** has been received, and may then determine that the received trigger entry is associated with an auto-share command. The trigger entry **122** of “@” is just one example, and other characters, symbols, or sequences of characters may be used as trigger entries.

**[0018]** The application **130** then treats input received after the trigger entry **122** as a  
25 user identifier of a person with whom to share the document **114** (sometimes referred to herein as a “mentioned user” **132**). In this example, the user identifier entry **124** is “John Doe.” According to examples, the user identifier entry **124** may be a name, an e-mail address, a username, or an alias associated with the mentioned user **132** within the online service **108** or collaboration and/or document management system (i.e., document system  
30 **110**). These examples are not limiting, and further examples of user identifier entries **124** are within the scope of the present disclosure. In one example, the user identifier entry **124** is entered by the sharing user **102**. In another example, the user identifier is selected from a list of users.

**[0019]** Upon receiving the trigger entry **122** and a user identifier entry **124**, an auto-



share system **128a,b** (generally, **128**) communicatively attached to the application **130** checks to see if the mentioned user **132** has access to the document **114**. For example, the auto-share system **128** is illustrative of a software module, system, or device operative to perform seamless sharing of a document **114** with another user with whom the document is not shared. In some examples, the auto-share system **128b** is stored and executed locally on the client device **104**. In other examples, the auto-share system **128a** lives in the online service **108** rather than on the client device **104**. According to an aspect, the auto-share system **128** performs a permissions check to determine whether the mentioned user **132** has user access permissions **116** to the document **114**. In some examples, the auto-share system **128** makes an application programming interface (API) call to the server **112** to interrogate the server for user access permissions **116** information.

**[0020]** In response, the auto-share system **128** receives a permissions query response, wherein the response indicates whether the mentioned user **132** has user access permissions **116** to the document **114**. According to an example, if the mentioned user **132** has user access permissions **116**, the response indicates a type of user access permissions **116** the mentioned user **132** has. According to an aspect, when the mentioned user **132** has user access permissions **116** to the document **114**, the auto-share system **128** is operative to generate a request to send a notification to the mentioned user **132**. According to examples, the notification is an electronic notification, such as an email, a text message, an instant message, etc. In one example, the notification indicates that the mentioned user was mentioned in the document **114**. In another example, the notification includes a name of the document **114**. In another example, the notification includes a link to the document **114**. According to an aspect, when the trigger entry **122** is added to a comment, the notification includes the comment content.

**[0021]** In some examples, a determination is made that the mentioned user **132** does not have user access permissions **116** to the document **114**. In such examples, mentioning someone in a document **114** to which that person does not have access is likely an oversight. According to an aspect, when the mentioned user **132** does not have user access permissions **116** to the document, the auto-share system **128** is enabled to streamline the sharing experience by automatically generating a request to assign user access permissions **116** to the mentioned user **132** for the document **114**.

**[0022]** According to an example, prior to generating the request to assign user access permissions **116** to the mentioned user **132** for the document **114**, the auto-share system **128** is further operative to perform a second permissions check to determine whether the sharing

user (i.e., client user A **102**) has invite permissions. For example, the auto-share system **128** performs a permissions check to determine whether the sharing user **102** has permissions to invite other users to view or edit the document **114**. When the sharing user **102** has invite permissions, the auto-share system **128** is operative to generate a request to assign user access permissions **116** to the mentioned user **132** for the document **114**. According to an example, the auto-share system **128** is further operative to generate a request to send a notification to the mentioned user **132** with a link to the document **114**. According to an aspect, when the trigger entry **122** is included in a comment, the notification includes the content of the comment.

10 **[0023]** Alternatively, when the sharing user **102** does not have invite permissions, the auto-share system **128** is operative to provide a message to the sharing user **102** notifying the user that he/she does not have sharing permissions. According to an example, the auto-share system **128** is further operative to generate a request to send a notification to the mentioned user **132** comprising a link to the document **114**. For example, the mentioned user **132** is enabled to utilize the link to request user access permissions **116** for the document **114**.

**[0024]** When a sharing user **102** shares the document **114** with a mentioned user **132**, the auto-share system **128** is operative to provide a notification to the sharing user **102** notifying the user that the document **114** is being shared with the mentioned user **132**. According to an aspect, the notification is selectable, which when selected, provides functionalities for enabling the sharing user **102** to change user access permissions **116** if necessary. For example, the sharing user **102** may inadvertently share the document **114** with someone. Thus, the notification enables the sharing user **102** to quickly and easily make a quick and easy rectify his/her mistake. According to an example, when the sharing user **102** makes a change to user access permissions **116**, the auto-share system **128** generates a request to make the user-selected user access permission changes.

20 **[0025]** In some examples, the document **114** may be an unsaved document, or may be locally saved on the client computing device **102**. According to an aspect, when a trigger entry **122** is received in an unsaved document **114** or in a document that is locally saved on the client computing device **102**, the auto-share system **128** is operative to generate and provide a notification to the sharing user **102** indicating that the document **114** needs to be uploaded to the document system **110** to enable sharing of the document with the mentioned user **132**.

**[0026]** In some examples, a functionality is provided for enabling the sharing user

**102** to upload the document **114** to the documents system **110** for storage in the storage repository **126**. For example, when the sharing user **102** has one account with the document system **110**, the auto-share system **128** is operative to provide a functionality, such as an “OK” button, which when selected, automatically uploads the document **114** to the user’s  
5 account in the storage repository **126**. As another example, when the sharing user **102** has more than one account with the document system **110**, the auto-share system **128** is operative to provide functionality for allowing the sharing user **102** to select an account to upload the document **114**. For example, a list of the user’s accounts may be provided from which the sharing user **102** is enabled to select an account. Upon selection of an account,  
10 the auto-share system **128** is operative to upload the document **114** to the user’s account in the storage repository **126**. When the document **114** is uploaded to the documents system **110**, the auto-share system **128** is further operative to automatically assign user access permissions to the mentioned user **132**, and generate a request to send a notification to the mentioned user **132** comprising a link to the document **114**.

15 **[0027]** Example interfaces generated by aspects of the auto-share system **128** are described throughout, including with respect to **FIGURES 2A-3C**. With reference now to **FIGURE 2A**, an example user interface display **200** generated by aspects of an application **130** and displayed by the client computing device **104** is shown. In the illustrated example, the application **130** is a word processing application. As illustrated, the display **200** includes  
20 a toolbar, and a content region display area **203**. The content region display area **203** operates to display one or more content regions from a document **114**. In some examples, a user **102** can interact with and modify the content region that is displayed by adding, removing, repositioning, or otherwise modifying various content elements of the content region display area **203**.

25 **[0028]** In the illustrated example, the content region display area **203** displays a page **205** from an example document **114**. The page **205** is an example of a content authoring canvas. Other examples of content authoring canvases include slides and spreadsheets. In some aspects, the content region display area **203** displays a portion of a page rather than a whole page. Alternatively or additionally, the content region display area **203** may display  
30 multiple pages.

**[0029]** In the illustrated example, the page **205** includes textual content and the trigger entry **122**. The textual content represents text the user **102** or another user has added to the page **205**. In aspects, various techniques may be used to add text to the page **205**. For example, a user may type some or all of the characters in the textual content using a

keyboard, such as a physical keyboard or a virtual (or soft) keyboard that is generated and displayed on the display **200**. Alternatively or additionally, a user may enter some or all of the textual content via copy and paste, voice commands via a device microphone, handwritten commands via a stylus, pen, or other writing implement, and/or other suitable commands.

**[0030]** With reference still to **FIGURE 2A**, a user is performing an inline auto-share of the document **114**, wherein an inline auto-share is an example of an inline command. The trigger entry **122** is a user input that the application **130** recognizes as being associated with an inline command. In some aspects, the trigger entry **122** is a sequence of characters that are input into the page **205**. In the example shown, the trigger entry **122** is “@.” Additionally or alternatively, in some aspects, the trigger entry **122** is a combination of keystrokes that do not necessarily result in characters being input on the page **205**. For example, in some aspects, a combination of the ctrl key and at least one other key is recognized as a trigger entry **122**. Other aspects are possible as well.

**[0031]** In some aspects, after the user **102** inputs the trigger entry **122**, the user may then enter additional input, such as textual input. As described above, the application **130** (and auto-share system **128**) treats input received after the trigger entry **122** as a user identifier entry **124**, identifying a person with whom the user **102** wants to share the document **114**. In some examples, the user **102** enters a user’s name, username, alias, email address, or other user identifier. In other examples and as illustrated in **FIGURE 2A**, when the user starts to input a user identifier entry **124**, a popup window is displayed including a list **202** of people from which the user is enabled to select. According to an aspect, the user is enabled to continue typing fluidly without having to manually open a dialog.

**[0032]** In one example, the list is filtered as the user types. In the illustrated example, the user **102** starts to enter a user identifier entry **124** with a textual input of a “J.” In response, the auto-share system **128** performs an action of displaying a popup window for displaying a list **202** of users based on the user’s input. For example, based on the user’s input of a “J” after the trigger entry **122**, the list **202** is filtered to people with user identifiers (e.g., name, username, alias, email) that start with a “J.” Also as illustrated, the user **102** selects a person from the list, “John Doe,” as the person with whom the user wants to share the document **114**. When a user identifier is entered or when a person is selected from the list **202**, the entered input or selection is identified as the user identifier entry **124**.

**[0033]** With reference now to **FIGURE 2B**, the example user interface display **200** of **FIGURE 2A** is shown, wherein the display **200** further includes a comments pane **207**.

According to an aspect, the comments pane 207 operates to display users' comments 204, wherein a comment is a note or annotation that an author or reviewer can add to a document 114. In some examples and as illustrated, the comments pane 207 further operates to receive comment content. In other examples, comment content is received in a comment bubble, or  
5 in another region provided in the display 200. According to examples, comment content is received upon selection of new comment functionality. There may be various methods for selecting the new comment functionality, for example, via selecting a tool displayed in the toolbar, via a keyboard shortcut, via a spoken command, etc.

[0034] In the illustrated example, the user 102 is performing an inline auto-share of  
10 the document 114, wherein a trigger entry 122 is input into a comment 204. After the user 102 inputs the trigger entry 122, the user may then enter additional input, such as textual input. As described above, the application 130 (and auto-share system 128) treats input received after the trigger entry 122 as a user identifier entry 124, identifying the person with whom the user 102 wants to share the document 114. In some examples, when the user starts  
15 to input a user identifier entry 124, a popup window is displayed including a list 202 of people from which the user is enabled to select. According to an aspect, the user is enabled to continue typing fluidly without having to manually open a dialog.

[0035] With reference now to FIGURE 2C, the example user interface display 200  
of FIGURES 2A and 2B is shown, wherein the display further includes a notification 206  
20 for informing the sharing user 102 that the document 114 is being shared with the mentioned user 132 (i.e., person identified by the user identifier entry 124). In one example, when the trigger entry 122 and user identifier entry 124 are received, and when the mentioned user 132 has access to the document 114, the auto-share system 128 makes a request to send a notification to the mentioned user 132 including a link to the document 114 and a  
25 notification that he/she was mentioned in the document 114. If the trigger entry 122 was added to a comment 204, the notification includes the comment content.

[0036] In another example, when the trigger entry 122 and user identifier entry 124  
are received, when the mentioned user 132 does not have access to the document 114, and  
when the sharing user 102 has permission to share the document 114 with a person who  
30 does not have access to the document, the auto-share system 128, the auto-share system 128 makes a request to give the mentioned user 132 user access permissions 116 to the document 114, and makes a request to send a notification to the mentioned user 132 including a link to the document 114 and a notification that he/she was mentioned in the document 114. If the trigger entry 122 was added to a comment 204, the notification includes the comment

content.

[0037] According to an aspect and as illustrated in **FIGURE 2C**, when the document **114** is shared with the mentioned user **132**, a notification **206** is displayed by the auto-share system **128** to notify the sharing user **102** that the document **114** is being shared  
5 with the mentioned user **132**. In one example, the notification **206** is a fly-out notification. According to an aspect, the notification **206** is selectable.

[0038] For example and as illustrated in **FIGURE 2D**, selection of the notification **206** causes a share pane **208** to be displayed. According to an aspect, the share pane **208** operates to provide various sharing functionalities, for example, for enabling the user **102**  
10 to invite other people to access the document **114**, to assign specific user access permissions **116**, and to make changes to user access permissions **116**. In one example, if the sharing user **102** inadvertently shares the document **114** with someone (e.g., enters or selects an unintended user via the user identifier entry **124**), the sharing user **102** is enabled to quickly and easily modify the user access permissions **116** afforded to the user. According to an  
15 aspect, when the sharing user **102** selects to make a change to a mentioned user's **132** user access permissions **116**, the auto-share system **128** communicates the changes for modifying the user access permissions **116** stored in the document system **110**.

[0039] Aspects of an online document system **110** enable users to share and collaborate on documents **114**. Without the online document system **110**, users can share a  
20 document **114** with others by sending the document as an email attachment. However, doing this creates multiple versions of the same document, which can be difficult to manage. When sharing a document **114** utilizing the online document system **110**, users are enabled to give others access to the same document **114**. Accordingly, the sharing user **102** and the people the sharing user shares the document **114** with are enabled to edit the same  
25 document without having to keep track of multiple versions. According to an aspect, to share a document **114** using auto-share functionalities, the document needs to be saved in the sharing user's online storage repository **126** of the document system **110**.

[0040] With reference now to **FIGURE 3A**, an example user interface display **300** generated by aspects of an application **130** and displayed by the client computing device  
30 **104** is shown. In the illustrated example, the application **130** is a slide presentation application. The content region display area **203** operates to display one or more content regions from a document **114**. In the illustrated example, the content region display area **203** displays a slide **301** from an example document **114**. The slide **301** is an example of a content authoring canvas.

[0041] In the illustrated example, the document is not saved or is locally saved on the user's client device 102. And the sharing user 102 tries to share the document 114 using auto-share functionalities. For example, the sharing user 102 may input a trigger entry 122 and a user identifier entry 124 for auto-sharing the unsaved or local document 114 with a person associated with the user identifier entry 124. In response, the auto-share system 128 generates and displays a notification 302 to the sharing user 102 indicating that the document 114 needs to be uploaded to the document system 110 to enable auto-sharing of the document with the mentioned user 132. The notification 302 illustrated in FIGURE 3A is an example of a notification that may be displayed to a sharing user 102 with a single account with the document system 110. In examples, the notification 302 includes a user-selectable control (e.g., an "OK button 304) that, when selected, automatically uploads the document 114 to the user's account in the storage repository 126.

[0042] As another example, when the sharing user 102 has more than one account with the document system 110, the auto-share system 128 generates and displays a different notification, such as the example notification 306 illustrated in FIGURE 3B. The example notification 306 illustrated in FIGURE 3B includes a functionality for allowing the sharing user 102 to select an account to upload the document 114. For example, the notification 306 includes a list of the user's accounts 308a-c (collectively, 308), wherein the listed user's accounts 308 are selectable. According to an aspect, when a user account 308 is selected, the auto-share system 128 uploads the document 114 to the selected account in the storage repository 126. Further, when the document 114 is uploaded to the documents system 110, the auto-share system 128 automatically assigns user access permissions to the mentioned user 132, and generates a request to send a notification to the mentioned user 132 including a link to the document 114.

[0043] With reference now to FIGURE 3C, an example user interface display 300 is shown including an example of a notification 310 informing the sharing user 102 of a status of uploading the document 114. For example, when the sharing user 102 selects to upload the document 114 to the documents system 110, the auto-share system 128 generates and displays a notification 310 that lets the sharing user know that the document 114 is being uploaded to the user's account in the storage repository 126 and will be shared with the mentioned user 132 associated with the user identifier entry 124. As should be appreciated, the user interface displays 200,300 illustrated in FIGURES 2A-3C are for purposes of illustration. Aspects may be implemented in many different forms and should not be construed as limited to the illustrated examples.

[0044] Having described an operating environment and various user interface display examples with respect to **FIGURES 1-3C**, **FIGURE 4** is a flow chart showing general stages involved in an example method **400** for providing inline command functionality for automatically sharing a document **114** with user access permissions **116**.

5 With reference now to **FIGURE 4**, the method **400** begins at start OPERATION **402**, and proceeds to OPERATION **404**, where user input is received including a trigger entry **122** and a user identifier entry **124**. In one example, the user input is received within a content authoring canvas **205**, such as in page of a document, a spreadsheet of a spreadsheet document, a slide of a presentation document, etc. In another example, the user input is

10 received within a comment **204** in the document **114**. As described previously, the trigger entry may comprise one or more characters input by the sharing user **102** through keystrokes. Also as described above, the user identifier entry **124** may comprise a user's name, username, alias, email address, or other identifier input or selected by the sharing user **102**. In examples, the trigger entry **122** and the user identifier entry **124** are displayed in the

15 content authoring canvas **205**.

[0045] The method **400** proceeds to DECISION OPERATION **406**, where a determination is made as to whether the document **114** is saved to the document system **110** for enabling collaboration and sharing of the document with other users. If a determination is made that the document **114** is not saved or is locally saved to the sharing user's client

20 computing device **104**, the method **400** proceeds to OPERATION **408**, where the sharing user **102** is prompted to upload the document **114** to the user's cloud storage repository **126**, for example, by generating and presenting a notification **302,306**, such as the example notifications illustrated in **FIGURES 3A** and **3B**.

[0046] The method **400** proceeds from OPERATION **408** to DECISION OPERATION **410**, where a determination is made as to whether the sharing user **102** approves to upload the document **114**. For example, the sharing user **102** may select a user-selectable control, such as an "OK button **304**) to enable uploading and storing the document **114** to the document system **110**. In another example, such as when the sharing user **102** has more than one document system **110** account, the user may select an account **308** from a

25 listing of the user's accounts to which to upload and store the document **114**. When a determination is made that approval to upload the document **114** is received, the method **400** proceeds to OPERATION **412**, where the document **114** is uploaded to the user's cloud storage repository **126**.

[0047] When a positive determination is made at DECISION OPERATION **406**



(i.e., that the document 114 is stored in the document system 110), the method 400 proceeds to DECISION OPERATION 414, where a determination is made as to whether the mentioned user 132 (i.e., the person associated with the user identifier entry 124) has access to the document 114. For example, upon receiving the trigger entry 122 and user identifier entry 124, the auto-share system 128 generates and executes a permissions query based on the user identifier entry 124, requesting permissions information from the server 112 for making a determination as to whether the mentioned user 132 has user access permissions 116 to the document 114.

[0048] When a determination is made that the mentioned user 132 has access to the document 114, the method 400 proceeds to OPERATION 416, where a notification is sent to the mentioned user 132 informing the mentioned user that he/she was mentioned in the document 114. In some examples, a link to the document 114 is included in the notification. Further, if the mentioned user 132 was mentioned in a comment 204 (e.g., the trigger entry 122 and user identifier entry 124 identifying the mentioned user 132 were input into a comment 204), the notification further includes the content of the comment.

[0049] When a determination is made at DECISION OPERATION 414 that the mentioned user 132 does not have user access permissions 116 to the document 114, the method 400 proceeds to DECISION OPERATION 418, where a determination is made as to whether the sharing user 102 has sharing permissions. For example, the auto-share system 128 generates and executes a permissions query based on the sharing user 102, wherein the auto-share system 128 requests permissions information from the server 112 for making a determination as to whether the sharing user 102 is able to share the document 114 with someone who does not have user access permissions 116 to the document 114.

[0050] When a determination is made that the sharing user 102 has sharing permissions, the method 400 proceeds to OPERATION 424, where the auto-share system 128 makes a call to the server 112 to assign user access permissions 116 to the mentioned user 132 for the document 114. The method 400 continues to OPERATION 416, where a notification is sent to the mentioned user 132 informing the mentioned user that he/she was mentioned in the document 114. In some examples, a link to the document 114 is included in the notification. Further, if the mentioned user 132 was mentioned in a comment 204 (e.g., the trigger entry 122 and user identifier entry 124 identifying the mentioned user 132 were input into a comment 204), the notification further includes the content of the comment.

[0051] When a determination is made that the sharing user 102 does not have

sharing permissions at DECISION OPERATION 418, the method 400 proceeds to OPERATION 420, where the auto-share system 128 generates and displays an error dialog informing the user that he/she does not have sharing permissions. The method 400 continues to OPERATION 422, where a notification is provided to the mentioned user 132 informing  
5 the mentioned user that he/she was mentioned in the document 114, that he/she does not have access to the document 114, but can request access to the document 114. In some examples, a link to the document 114 is included in the notification, wherein selection of the link makes a call to the server 112 to request user access permissions for the document 114. The method 400 ends at OPERATION 498.

10 [0052] While implementations have been described in the general context of program modules that execute in conjunction with an application program that runs on an operating system on a computer, those skilled in the art will recognize that aspects may also be implemented in combination with other program modules. Generally, program modules include routines, programs, components, data structures, and other types of structures that  
15 perform particular tasks or implement particular abstract data types.

[0053] The aspects and functionalities described herein may operate via a multitude of computing systems including, without limitation, desktop computer systems, wired and wireless computing systems, mobile computing systems (e.g., mobile telephones, netbooks, tablet or slate type computers, notebook computers, and laptop computers), hand-held  
20 devices, multiprocessor systems, microprocessor-based or programmable consumer electronics, minicomputers, and mainframe computers.

[0054] In addition, according to an aspect, the aspects and functionalities described herein operate over distributed systems (e.g., cloud-based computing systems), where application functionality, memory, data storage and retrieval and various processing  
25 functions are operated remotely from each other over a distributed computing network, such as the Internet or an intranet. According to an aspect, user interfaces and information of various types are displayed via on-board computing device displays or via remote display units associated with one or more computing devices. For example, user interfaces and information of various types are displayed and interacted with on a wall surface onto which  
30 user interfaces and information of various types are projected. Interaction with the multitude of computing systems with which implementations are practiced include, keystroke entry, touch screen entry, voice or other audio entry, gesture entry where an associated computing device is equipped with detection (e.g., camera) functionality for capturing and interpreting user gestures for controlling the functionality of the computing device, and the like.

[0055] FIGURES 5-7 and the associated descriptions provide a discussion of a variety of operating environments in which examples are practiced. However, the devices and systems illustrated and discussed with respect to FIGURES 5-7 are for purposes of example and illustration and are not limiting of a vast number of computing device configurations that are utilized for practicing aspects, described herein.

[0056] FIGURE 5 is a block diagram illustrating physical components (i.e., hardware) of a computing device 500 with which examples of the present disclosure may be practiced. In a basic configuration, the computing device 500 includes at least one processing unit 502 and a system memory 504. According to an aspect, depending on the configuration and type of computing device, the system memory 504 comprises, but is not limited to, volatile storage (e.g., random access memory), non-volatile storage (e.g., read-only memory), flash memory, or any combination of such memories. According to an aspect, the system memory 504 includes an operating system 505 and one or more program modules 506 suitable for running software applications 550. According to an aspect, the system memory 504 includes the auto-share system 128. The operating system 505, for example, is suitable for controlling the operation of the computing device 500. Furthermore, aspects are practiced in conjunction with a graphics library, other operating systems, or any other application program, and is not limited to any particular application or system. This basic configuration is illustrated in FIGURE 5 by those components within a dashed line 508. According to an aspect, the computing device 500 has additional features or functionality. For example, according to an aspect, the computing device 500 includes additional data storage devices (removable and/or non-removable) such as, for example, magnetic disks, optical disks, or tape. Such additional storage is illustrated in FIGURE 5 by a removable storage device 509 and a non-removable storage device 510.

[0057] As stated above, according to an aspect, a number of program modules and data files are stored in the system memory 504. While executing on the processing unit 502, the program modules 506 (e.g., auto-share system 128) perform processes including, but not limited to, one or more of the stages of the method 400 illustrated in FIGURE 4. According to an aspect, other program modules are used in accordance with examples and include applications such as electronic mail and contacts applications, word processing applications, spreadsheet applications, database applications, slide presentation applications, drawing or computer-aided application programs, etc.

[0058] According to an aspect, aspects are practiced in an electrical circuit comprising discrete electronic elements, packaged or integrated electronic chips containing

logic gates, a circuit utilizing a microprocessor, or on a single chip containing electronic elements or microprocessors. For example, aspects are practiced via a system-on-a-chip (SOC) where each or many of the components illustrated in **FIGURE 5** are integrated onto a single integrated circuit. According to an aspect, such an SOC device includes one or more  
5 processing units, graphics units, communications units, system virtualization units and various application functionality all of which are integrated (or “burned”) onto the chip substrate as a single integrated circuit. When operating via an SOC, the functionality, described herein, is operated via application-specific logic integrated with other components of the computing device **500** on the single integrated circuit (chip). According to an aspect,  
10 aspects of the present disclosure are practiced using other technologies capable of performing logical operations such as, for example, AND, OR, and NOT, including but not limited to mechanical, optical, fluidic, and quantum technologies. In addition, aspects are practiced within a general purpose computer or in any other circuits or systems.

**[0059]** According to an aspect, the computing device **500** has one or more input  
15 device(s) **512** such as a keyboard, a mouse, a pen, a sound input device, a touch input device, etc. The output device(s) **514** such as a display, speakers, a printer, etc. are also included according to an aspect. The aforementioned devices are examples and others may be used. According to an aspect, the computing device **500** includes one or more communication connections **516** allowing communications with other computing devices **518**. Examples of  
20 suitable communication connections **516** include, but are not limited to, radio frequency (RF) transmitter, receiver, and/or transceiver circuitry; universal serial bus (USB), parallel, and/or serial ports.

**[0060]** The term computer readable media as used herein include computer storage  
25 media. Computer storage media include volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information, such as computer readable instructions, data structures, or program modules. The system memory **504**, the removable storage device **509**, and the non-removable storage device **510** are all computer storage media examples (i.e., memory storage.) According to an aspect, computer storage media includes RAM, ROM, electrically erasable programmable read-only memory  
30 (EEPROM), flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other article of manufacture which can be used to store information and which can be accessed by the computing device **500**. According to an aspect, any such computer storage media is part of the computing device **500**. Computer

storage media does not include a carrier wave or other propagated data signal.

**[0061]** According to an aspect, communication media is embodied by computer readable instructions, data structures, program modules, or other data in a modulated data signal, such as a carrier wave or other transport mechanism, and includes any information  
5 delivery media. According to an aspect, the term “modulated data signal” describes a signal that has one or more characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, radio frequency (RF), infrared, and other wireless media.

**[0062]** **FIGURES 6A** and **6B** illustrate a mobile computing device **600**, for example, a mobile telephone, a smart phone, a tablet personal computer, a laptop computer, and the like, with which aspects may be practiced. With reference to **FIGURE 6A**, an example of a mobile computing device **600** for implementing the aspects is illustrated. In a basic configuration, the mobile computing device **600** is a handheld computer having both  
10 input elements and output elements. The mobile computing device **600** typically includes a display **605** and one or more input buttons **610** that allow the user to enter information into the mobile computing device **600**. According to an aspect, the display **605** of the mobile computing device **600** functions as an input device (e.g., a touch screen display). If included, an optional side input element **615** allows further user input. According to an aspect, the  
15 side input element **615** is a rotary switch, a button, or any other type of manual input element. In alternative examples, mobile computing device **600** incorporates more or less input elements. For example, the display **605** may not be a touch screen in some examples. In alternative examples, the mobile computing device **600** is a portable phone system, such as a cellular phone. According to an aspect, the mobile computing device **600** includes an  
20 optional keypad **635**. According to an aspect, the optional keypad **635** is a physical keypad. According to another aspect, the optional keypad **635** is a “soft” keypad generated on the touch screen display. In various aspects, the output elements include the display **605** for showing a graphical user interface (GUI), a visual indicator **620** (e.g., a light emitting diode), and/or an audio transducer **625** (e.g., a speaker). In some examples, the mobile computing  
25 device **600** incorporates a vibration transducer for providing the user with tactile feedback. In yet another example, the mobile computing device **600** incorporates input and/or output ports, such as an audio input (e.g., a microphone jack), an audio output (e.g., a headphone jack), and a video output (e.g., a HDMI port) for sending signals to or receiving signals from an external device. In yet another example, the mobile computing device **600** incorporates  
30

peripheral device port **640**, such as an audio input (e.g., a microphone jack), an audio output (e.g., a headphone jack), and a video output (e.g., a HDMI port) for sending signals to or receiving signals from an external device.

**[0063]** **FIGURE 6B** is a block diagram illustrating the architecture of one example of a mobile computing device. That is, the mobile computing device **600** incorporates a system (i.e., an architecture) **602** to implement some examples. In one example, the system **602** is implemented as a “smart phone” capable of running one or more applications (e.g., browser, e-mail, calendaring, contact managers, messaging clients, games, and media clients/players). In some examples, the system **602** is integrated as a computing device, such as an integrated personal digital assistant (PDA) and wireless phone.

**[0064]** According to an aspect, one or more application programs **650** are loaded into the memory **662** and run on or in association with the operating system **664**. Examples of the application programs include phone dialer programs, e-mail programs, personal information management (PIM) programs, word processing programs, spreadsheet programs, Internet browser programs, messaging programs, and so forth. According to an aspect, the auto-share system **128** is loaded into memory **662**. The system **602** also includes a non-volatile storage area **668** within the memory **662**. The non-volatile storage area **668** is used to store persistent information that should not be lost if the system **602** is powered down. The application programs **650** may use and store information in the non-volatile storage area **668**, such as e-mail or other messages used by an e-mail application, and the like. A synchronization application (not shown) also resides on the system **602** and is programmed to interact with a corresponding synchronization application resident on a host computer to keep the information stored in the non-volatile storage area **668** synchronized with corresponding information stored at the host computer. As should be appreciated, other applications may be loaded into the memory **662** and run on the mobile computing device **600**.

**[0065]** According to an aspect, the system **602** has a power supply **670**, which is implemented as one or more batteries. According to an aspect, the power supply **670** further includes an external power source, such as an AC adapter or a powered docking cradle that supplements or recharges the batteries.

**[0066]** According to an aspect, the system **602** includes a radio **672** that performs the function of transmitting and receiving radio frequency communications. The radio **672** facilitates wireless connectivity between the system **602** and the “outside world,” via a communications carrier or service provider. Transmissions to and from the radio **672** are

conducted under control of the operating system **664**. In other words, communications received by the radio **672** may be disseminated to the application programs **650** via the operating system **664**, and vice versa.

5 **[0067]** According to an aspect, the visual indicator **620** is used to provide visual notifications and/or an audio interface **674** is used for producing audible notifications via the audio transducer **625**. In the illustrated example, the visual indicator **620** is a light emitting diode (LED) and the audio transducer **625** is a speaker. These devices may be directly coupled to the power supply **670** so that when activated, they remain on for a duration dictated by the notification mechanism even though the processor **660** and other  
10 components might shut down for conserving battery power. The LED may be programmed to remain on indefinitely until the user takes action to indicate the powered-on status of the device. The audio interface **674** is used to provide audible signals to and receive audible signals from the user. For example, in addition to being coupled to the audio transducer **625**, the audio interface **674** may also be coupled to a microphone to receive audible input, such  
15 as to facilitate a telephone conversation. According to an aspect, the system **602** further includes a video interface **676** that enables an operation of an on-board camera **630** to record still images, video stream, and the like.

**[0068]** According to an aspect, a mobile computing device **600** implementing the system **602** has additional features or functionality. For example, the mobile computing  
20 device **600** includes additional data storage devices (removable and/or non-removable) such as, magnetic disks, optical disks, or tape. Such additional storage is illustrated in **FIGURE 6B** by the non-volatile storage area **668**.

**[0069]** According to an aspect, data/information generated or captured by the mobile computing device **600** and stored via the system **602** is stored locally on the mobile  
25 computing device **600**, as described above. According to another aspect, the data is stored on any number of storage media that is accessible by the device via the radio **672** or via a wired connection between the mobile computing device **600** and a separate computing device associated with the mobile computing device **600**, for example, a server computer in a distributed computing network, such as the Internet. As should be appreciated such  
30 data/information is accessible via the mobile computing device **600** via the radio **672** or via a distributed computing network. Similarly, according to an aspect, such data/information is readily transferred between computing devices for storage and use according to well-known data/information transfer and storage means, including electronic mail and collaborative data/information sharing systems.

**[0070]** **FIGURE 7** illustrates one example of the architecture of a system for providing inline command functionality for automatically sharing a document **114** with user access permissions **116** as described above. Content developed, interacted with, or edited in association with the auto-share system **128** is enabled to be stored in different communication channels or other storage types. For example, various documents may be stored using a directory service **722**, a web portal **724**, a mailbox service **726**, an instant messaging store **728**, or a social networking site **730**. The auto-share system **128** is operative to use any of these types of systems or the like for providing inline command functionality for automatically sharing a document **114** with user access permissions **116**, as described herein. According to an aspect, a server **720** provides the auto-share system **128** to clients **705a,b,c**. As one example, the server **720** is a web server providing the auto-share system **128** over the web. The server **720** provides the auto-share system **128** over the web to clients **705** through a network **740**. By way of example, the client computing device is implemented and embodied in a personal computer **705a**, a tablet computing device **705b** or a mobile computing device **705c** (e.g., a smart phone), or other computing device. Any of these examples of the client computing device are operable to obtain content from the store **716**.

**[0071]** Implementations, for example, are described above with reference to block diagrams and/or operational illustrations of methods, systems, and computer program products according to aspects. The functions/acts noted in the blocks may occur out of the order as shown in any flowchart. For example, two blocks shown in succession may in fact be executed substantially concurrently or the blocks may sometimes be executed in the reverse order, depending upon the functionality/acts involved.

**[0072]** The description and illustration of one or more examples provided in this application are not intended to limit or restrict the scope as claimed in any way. The aspects, examples, and details provided in this application are considered sufficient to convey possession and enable others to make and use the best mode. Implementations should not be construed as being limited to any aspect, example, or detail provided in this application. Regardless of whether shown and described in combination or separately, the various features (both structural and methodological) are intended to be selectively included or omitted to produce an example with a particular set of features. Having been provided with the description and illustration of the present application, one skilled in the art may envision variations, modifications, and alternate examples falling within the spirit of the broader aspects of the general inventive concept embodied in this application that do not depart from the broader scope.



## CLAIMS

1. A computer-implemented method for automatically sharing a document with user access permissions, comprising:
  - receiving user input from a first user comprising a trigger entry and a user identifier entry identifying a second user;
  - generating a first permissions query for user access permissions for the second user to the document; and
  - receiving permissions query results for the first permissions query;
    - when the permissions query results for the first permissions query indicate that the second user has user access permissions to the document, generating a request for sending a notification to the second user comprising a link to the document; and
    - when the permissions query results for the first permissions query indicate that the second user does not have user access permissions to the document, generating a second permissions query for sharing permissions for the first user;
      - when the permissions query results for the second permissions query indicate that the first user has sharing permissions, generating a request for assigning user access permissions to the second user and sending a notification to the second user comprising a link to the document.
2. The method of claim 1, further comprising: when the permissions query results for the second permissions query indicate that the first user does not have sharing permissions:
  - generating and displaying an error notification to the first user; and
  - generating a request for sending a notification to the second user comprising a link to the document, wherein selection of the link enables the second user to request user access permissions to the document.
3. The method of claim 1, wherein receiving user input from a first user comprising a trigger entry and a user identifier entry identifying a second user comprises receiving the trigger entry and user identifier entry in a document canvas or in a comment associated with the document.
4. The method of claim 3, further comprising: when the trigger entry and user identifier entry are included in a comment, providing the comment for inclusion in the notification to the second user.
5. The method of claim 1, wherein receiving a user identifier entry identifying a second user comprises:

receiving textual input associated with a name, username, alias, or email address of the second user;

generating and displaying a list of users based on the received textual input;

filtering the list of users based on the received textual input as it is being received;

and

receiving an indication of a selection of the second user from the list of users.

6. A system for automatically sharing a document with user access permissions, the system comprising a computing device, the computing device comprising:

at least one processing device; and

at least one computer readable data storage device storing instructions that, when executed by the at least one processing device, cause the computing device to:

receive user input from a first user comprising a trigger entry and a user identifier entry identifying a second user;

generate a first permissions query for user access permissions for the second user to the document; and

receive permissions query results for the first permissions query;

when the permissions query results for the first permissions query indicate that the second user has user access permissions to the document, generate a request for sending a notification to the second user comprising a link to the document; and

when the permissions query results for the first permissions query indicate that the second user does not have user access permissions to the document, generate a second permissions query for sharing permissions for the first user;

when the permissions query results for the second permissions query indicate that the first user has sharing permissions, generate a request for assigning user access permissions to the second user and for sending a notification to the second user comprising a link to the document.

7. The system of claim 6, wherein when the permissions query results for the second permissions query indicate that the first user does not have sharing permissions, the computing device is further operative to:

generate and display an error notification to the first user; and

generate a request for sending a notification to the second user comprising a link to

the document, wherein selection of the link enables the second user to request user access permissions to the document.

8. The system of claim 6, wherein the trigger entry and the user identifier entry are input in a document canvas or in a comment associated with the document.

9. The system of claim 8, wherein when the trigger entry and user identifier entry are input in a comment, the computing device is further operative to provide the comment for inclusion in the notification to the second user.

10. The system of claim 6, wherein in receiving a user identifier entry identifying a second user, the computing device is operative to:

- receive textual input associated with a name, username, alias, or email address of the second user;

- generate and display a list of users based on the received textual input;

- filter the list of users based on the received textual input as it is being received; and

- receive an indication of a selection of the second user from the list of users.

11. The system of claim 6, wherein in response to assigning user access permissions to the second user, the computing device is further operative to generate and display a selectable notification to the first user informing the first user that the document is being shared with the second user.

12. The system of claim 11, wherein the computing device is further operative to:

- receive a selection of the notification; and

- generate and display a share pane for enabling the first user to make changes to user access permissions.

13. The system of claim 6, wherein prior to generating the first permissions query, the computing device is further operative to:

- make a determination as to whether the document is saved to an online document system; and

- when the document is not saved to the online document system, prompt the first user to upload the document to the online document system for enabling sharing of the document.

14. The system of claim 13, wherein when the first user has more than one account with the online document system, the computing device is further operative to generate and display a list of the first user's accounts from which the first user is enabled to select an account to which to upload the document.

15. A computer readable storage device including computer readable instructions, which when executed by a processing unit is operative to:

receive user input from a first user comprising a trigger entry and a user identifier entry identifying a second user;

make a determination as to whether the document is saved to an online document system;

when the document is not saved to the online document system, prompt the first user to upload the document to the online document system for enabling sharing of the document;

generate a first permissions query for user access permissions for the second user to the document; and

receive permissions query results for the first permissions query;

when the permissions query results for the first permissions query indicate that the second user has user access permissions to the document, generate a request for sending a notification to the second user comprising a link to the document; and

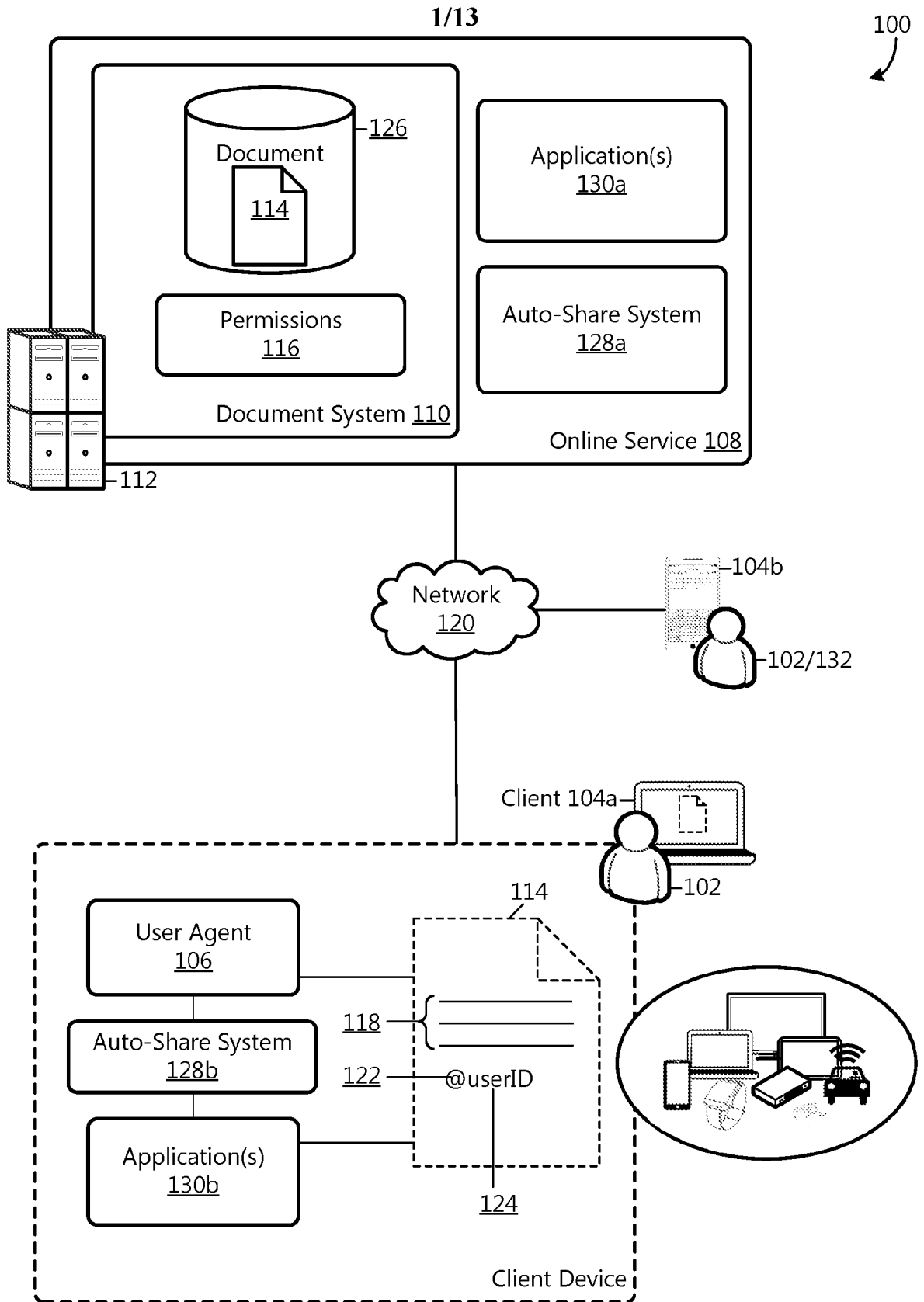
when the permissions query results for the first permissions query indicate that the second user does not have user access permissions to the document, generate a second permissions query for sharing permissions for the first user;

when the permissions query results for the second permissions query indicate that the first user has sharing permissions, generate a request for assigning user access permissions to the second user and sending a notification to the second user comprising a link to the document; and

when the permissions query results for the second permissions query indicate that the first user does not have sharing permissions, the computing device is further operative to:

generate and display an error notification to the first user; and

generate a request for sending a notification to the second user comprising a link to the document, wherein selection of the link enables the second user to request user access permissions to the document.



**FIG. 1**

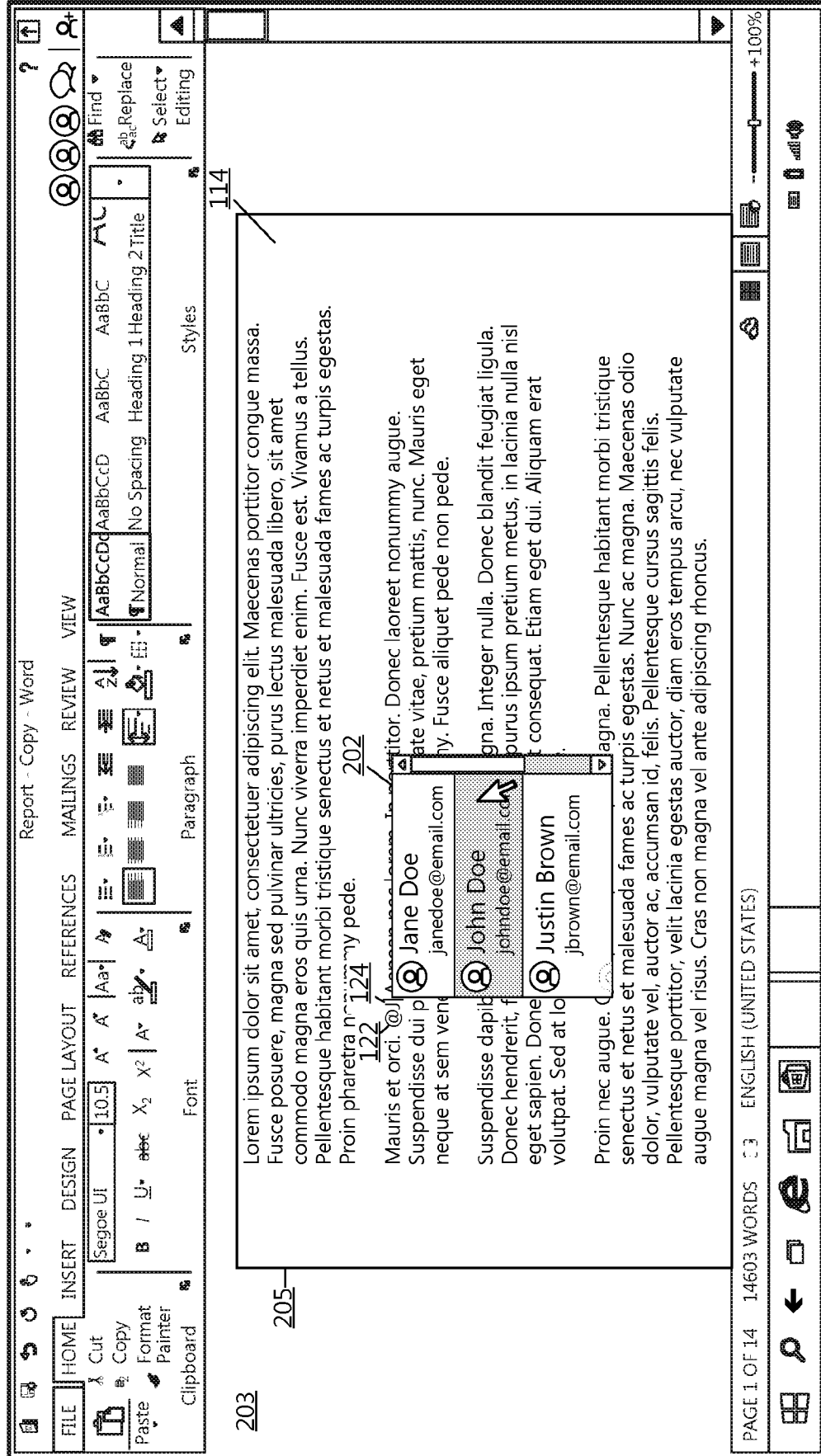


FIG. 2A

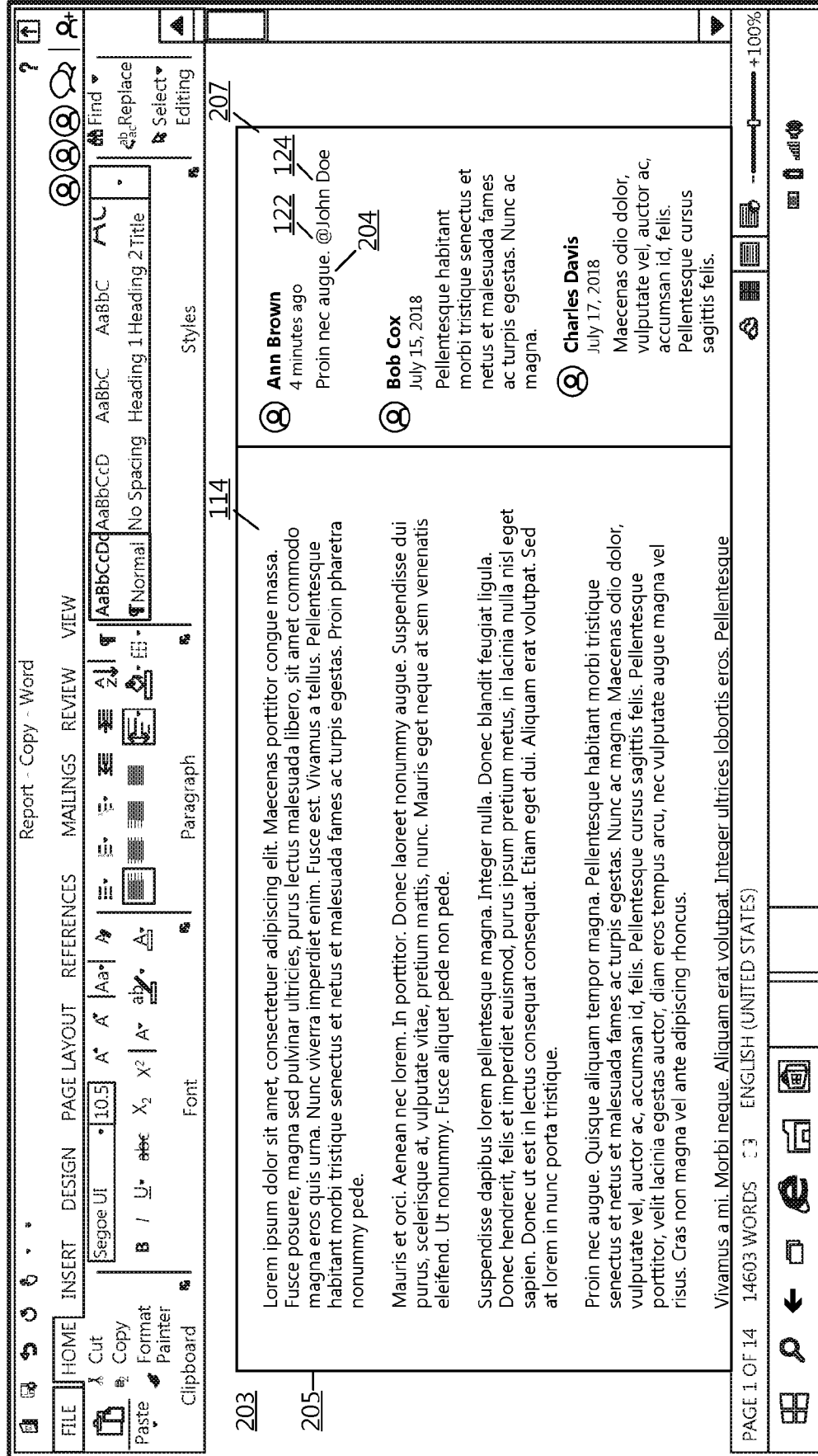


FIG. 2B

200 ↙

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206 ↙

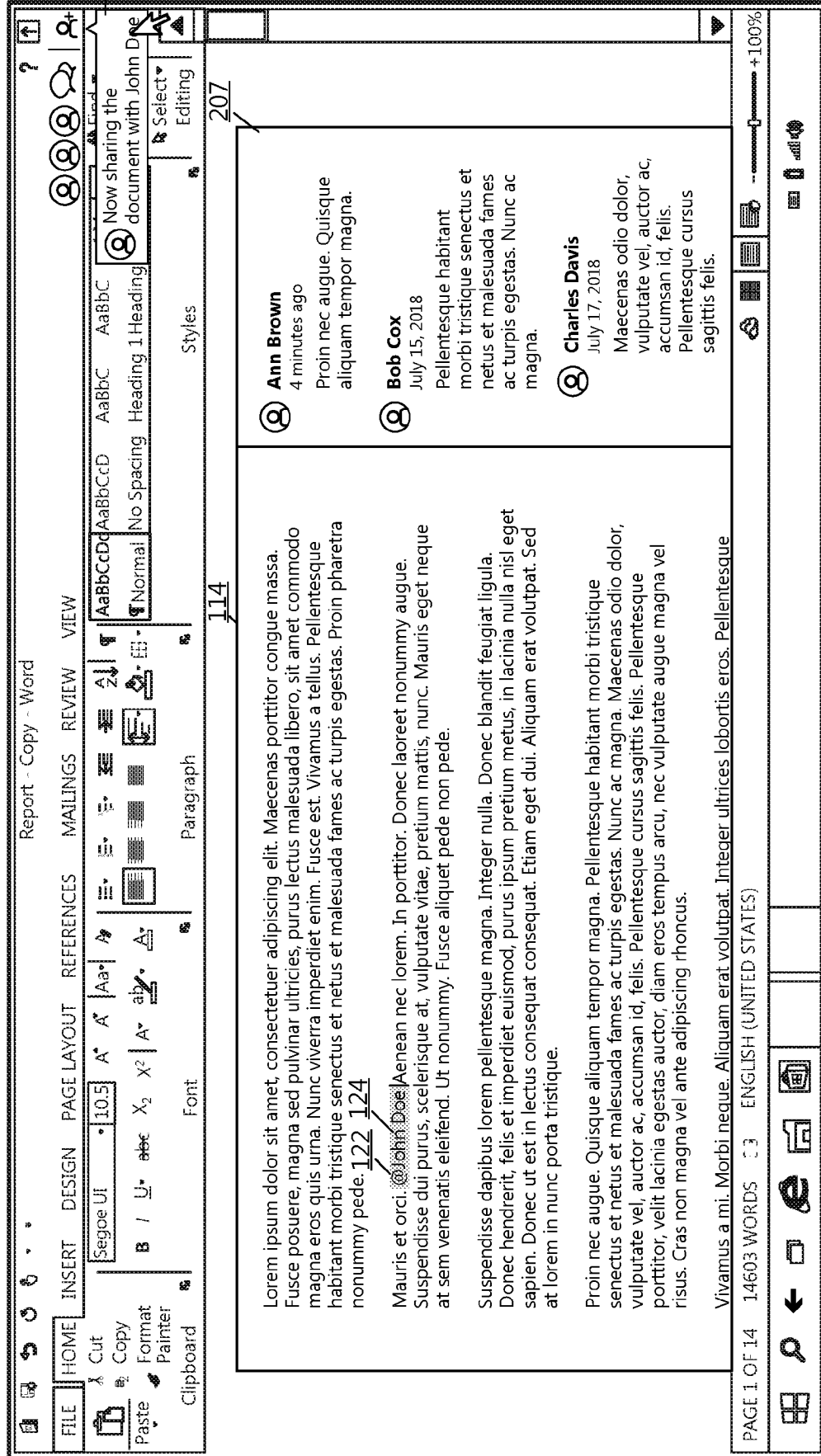


FIG. 2C



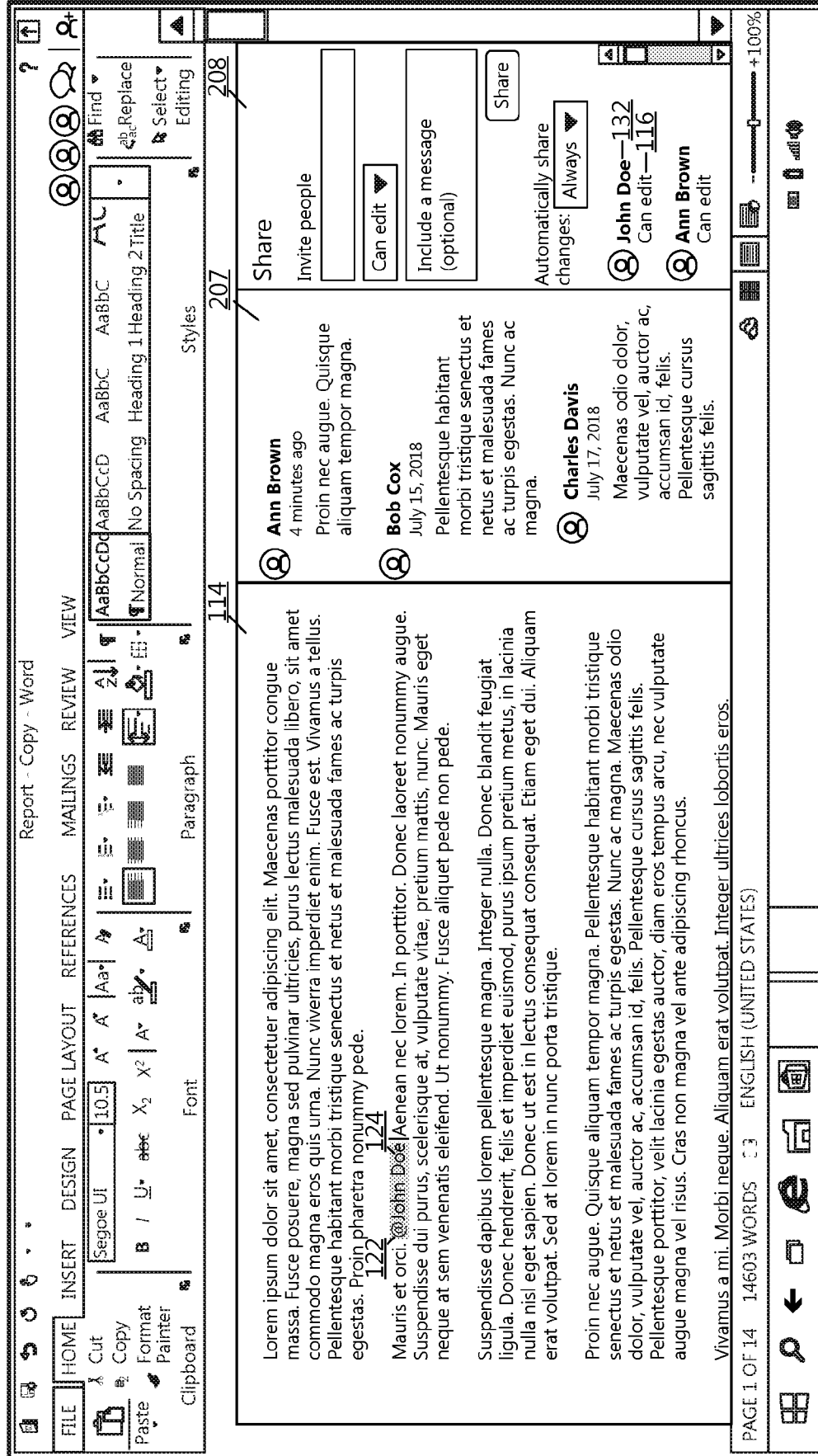
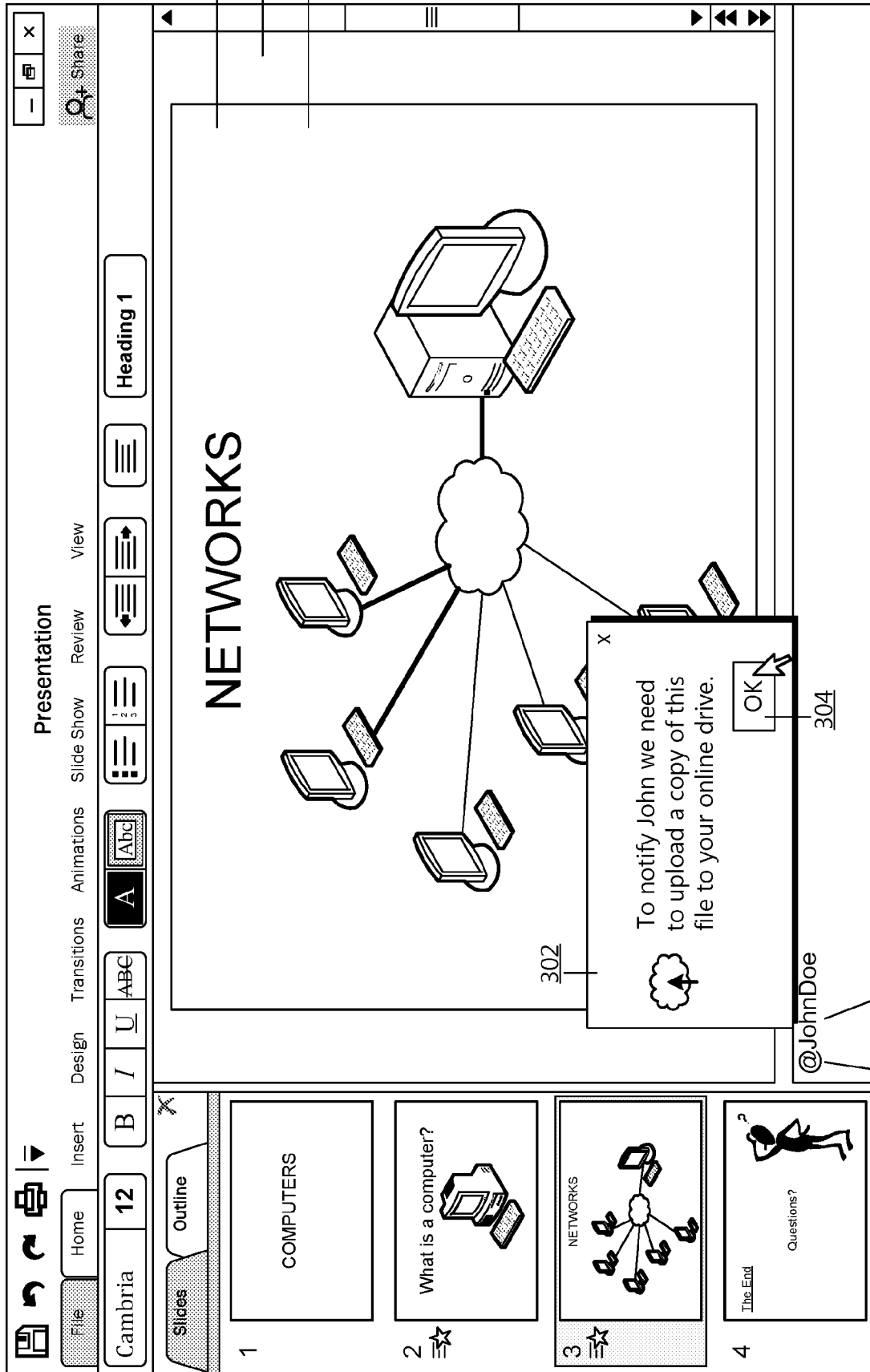


FIG. 2D

300 ↙



114

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301

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@JohnDoe

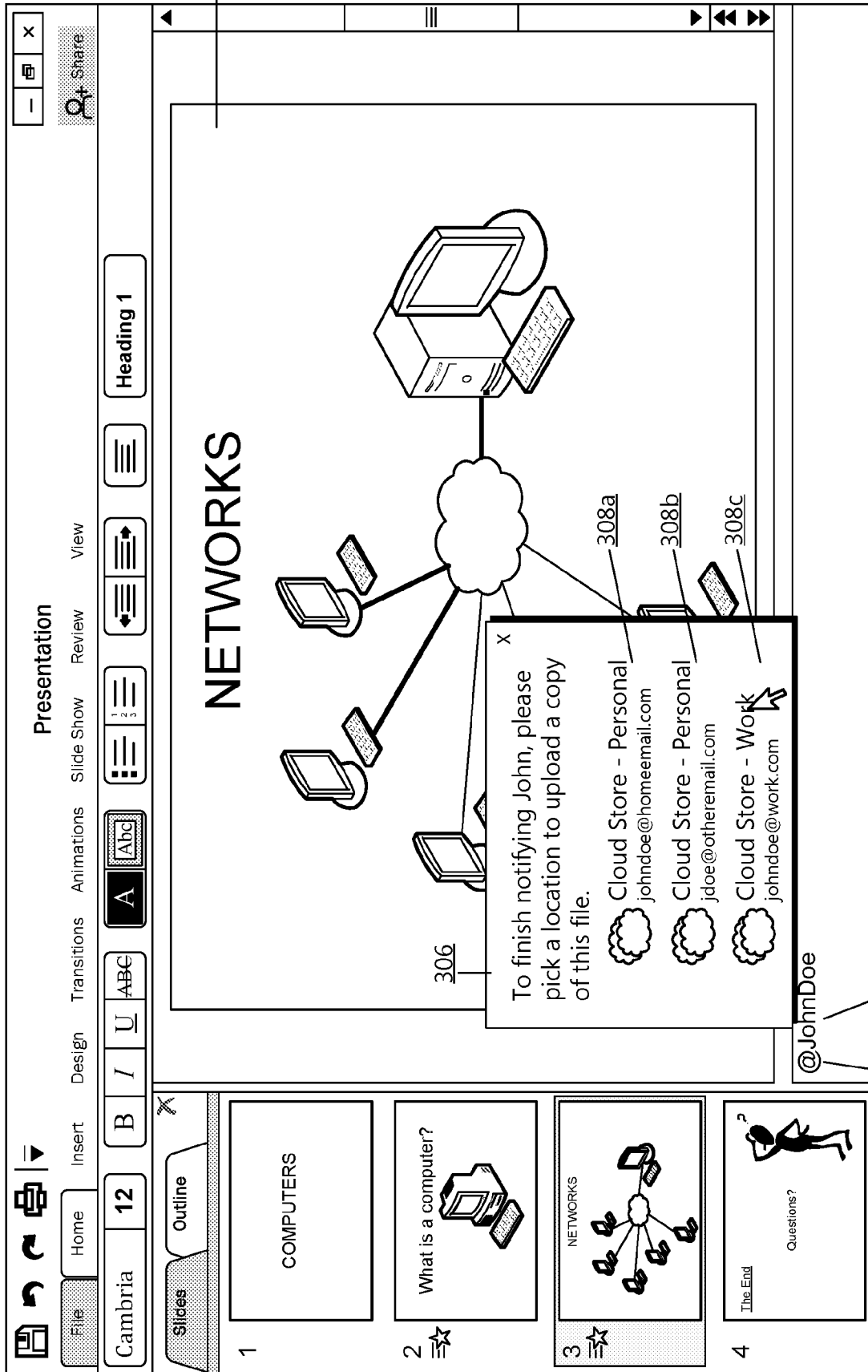
122

124

FIG. 3A

300 ↙

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114

306

308a

308b

308c

122

124

FIG. 3B

300 ↙

114

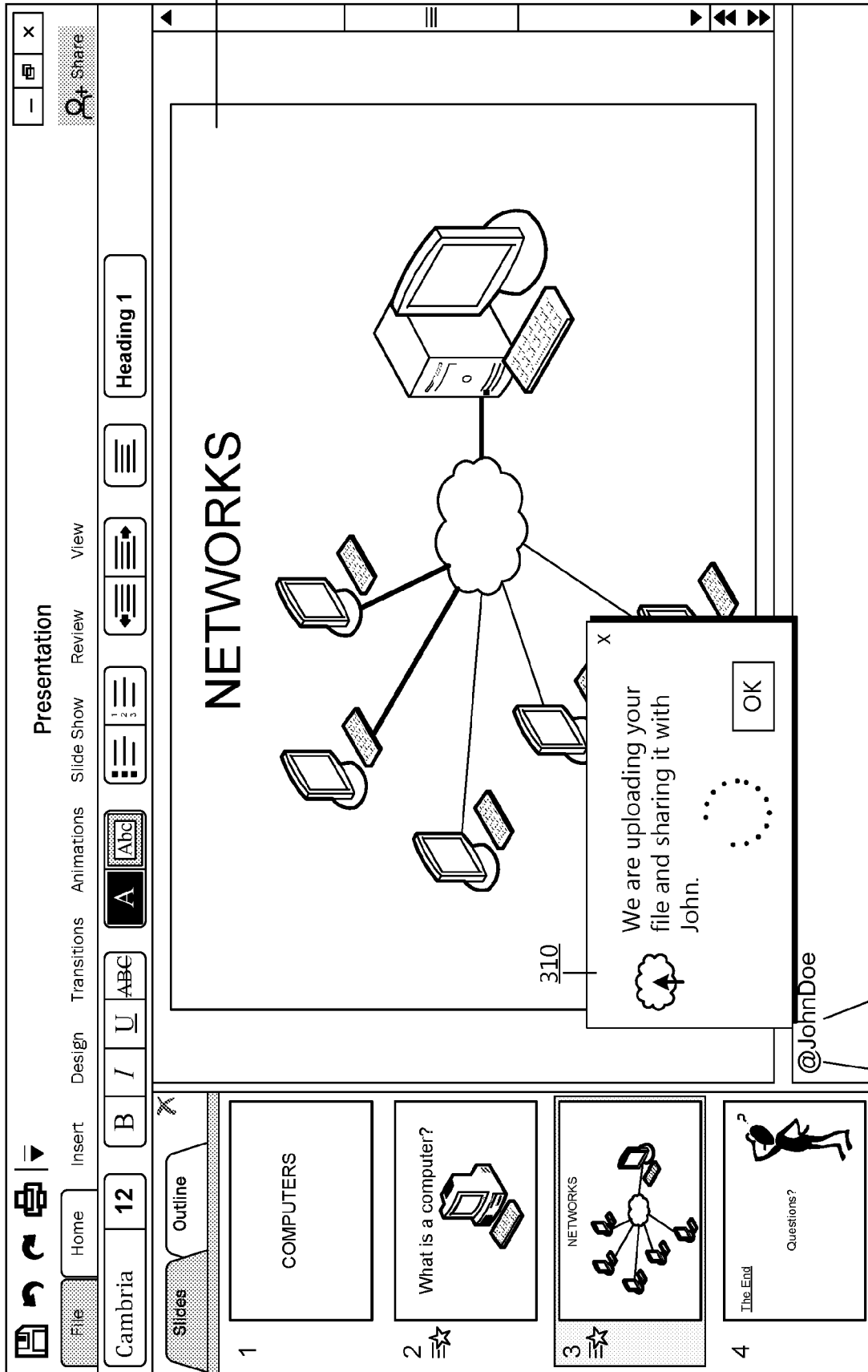


FIG. 3C

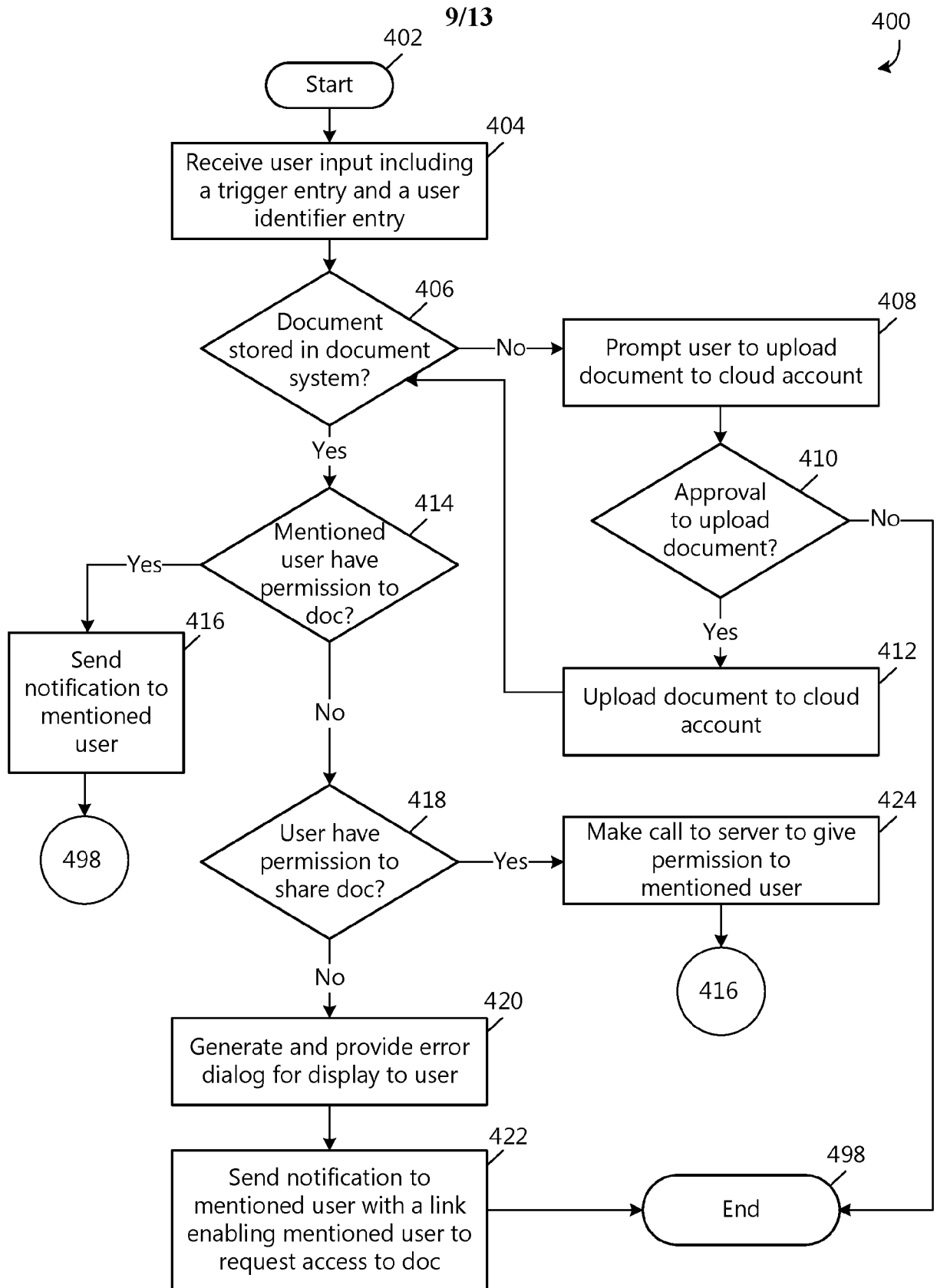
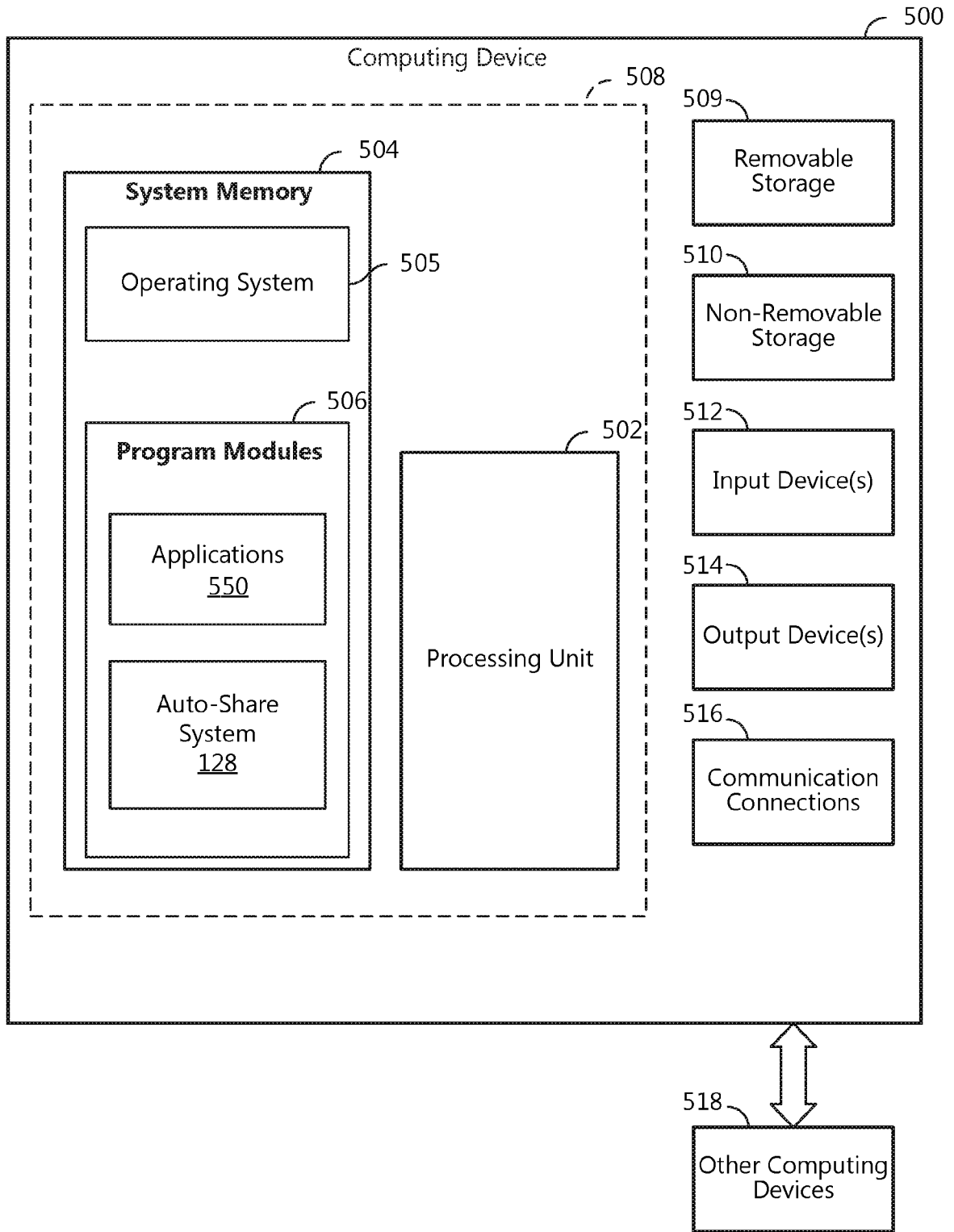
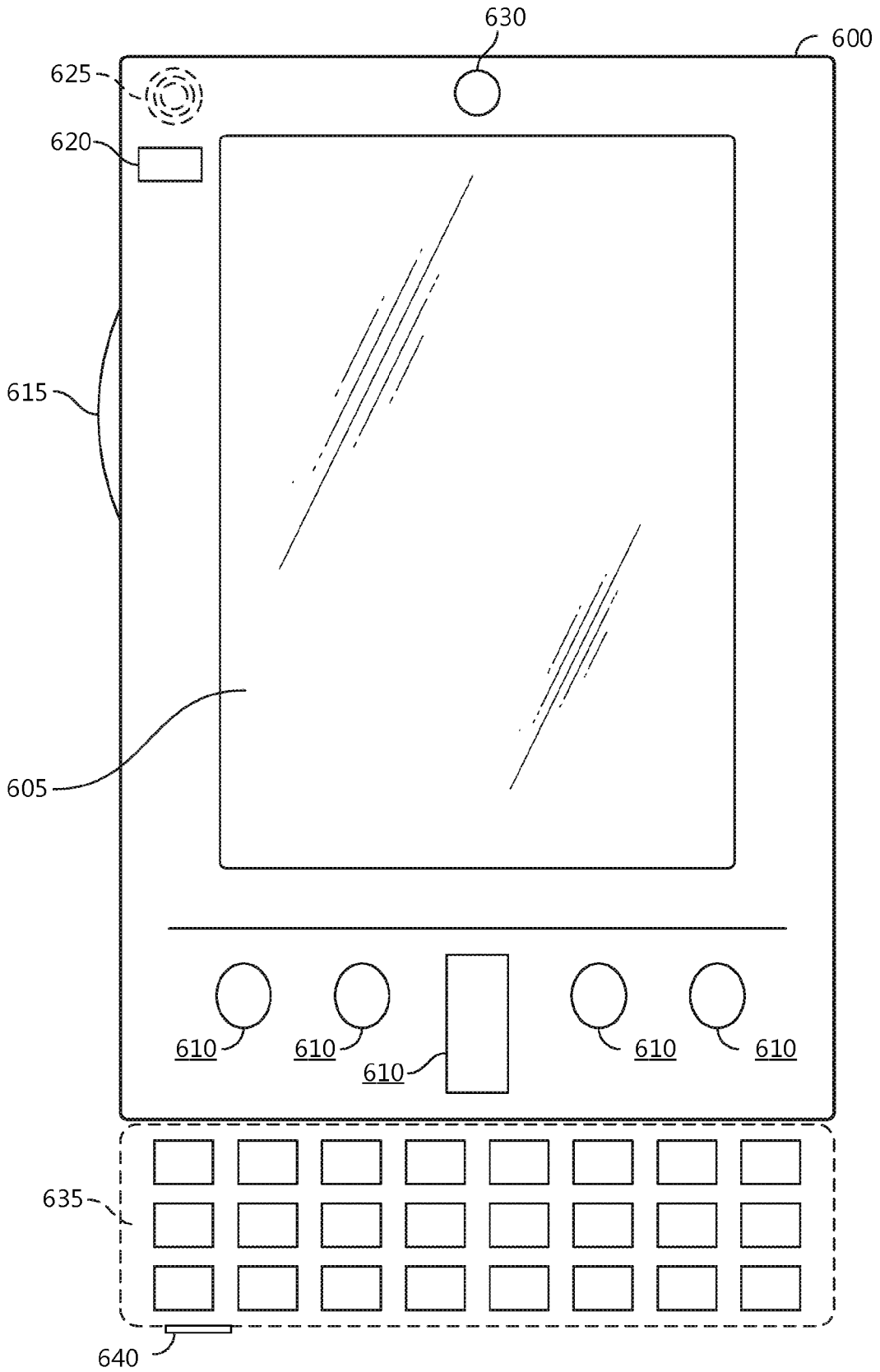


FIG. 4

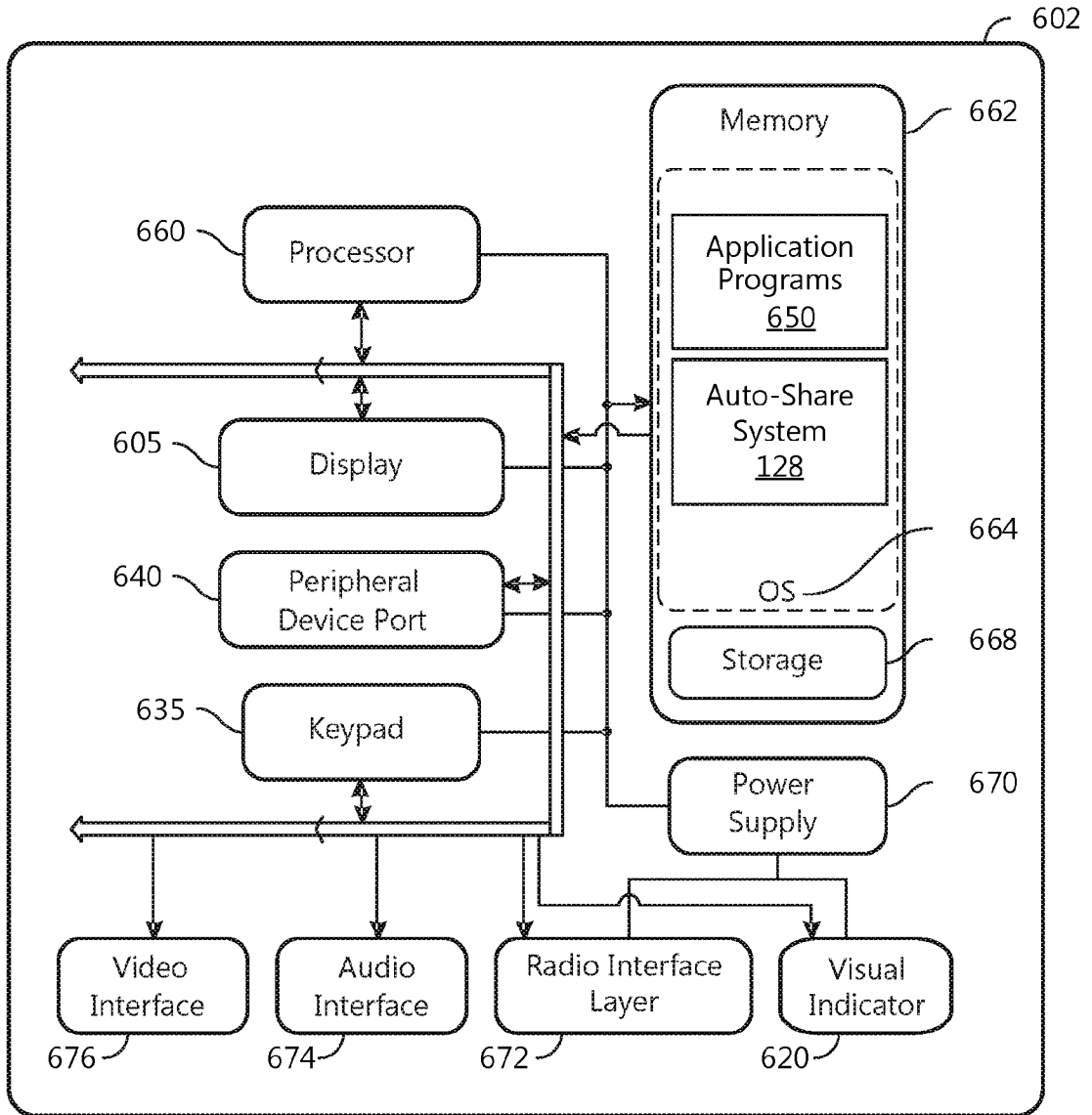


**FIG. 5**



MOBILE COMPUTING DEVICE

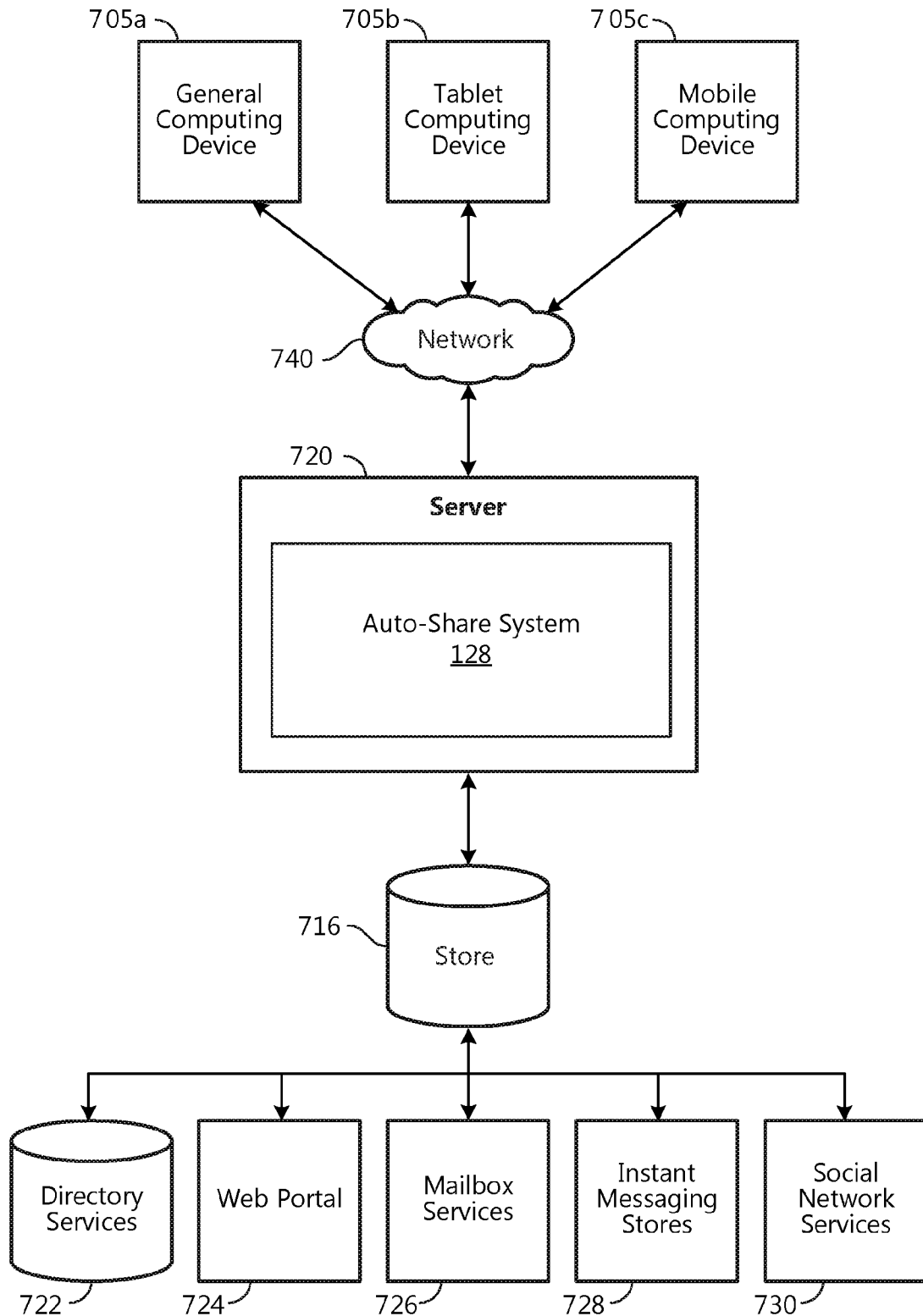
**FIG. 6A**



**FIG. 6B**



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**FIG. 7**

# INTERNATIONAL SEARCH REPORT

International application No PCT/US2017/034097
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. G06Q10/10 G06F17/24 H04L29/06 ADD.				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) G06Q G06F H04L				
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				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	WO 2012/125338 A1 (GOOGLE INC [US]; COHEN GABRIEL [US]) 20 September 2012 (2012-09-20) abstract; claims 37-53; figures 6, 10A, 10B paragraph [0002] - paragraph [0004] paragraph [0016] - paragraph [0019] paragraph [0048] - paragraph [0049] paragraph [0068] - paragraph [0080] paragraph [0121] - paragraph [0141] -----	1-15		
X	US 2006/224735 A1 (HILL CHARLES R [US] ET AL) 5 October 2006 (2006-10-05) the whole document ----- -/--	1-15		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.</td> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> See patent family annex.</td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.			
* Special categories of cited documents :				
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family			
Date of the actual completion of the international search	Date of mailing of the international search report			
14 July 2017	26/07/2017			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Türkeli, Yasemin			

**INTERNATIONAL SEARCH REPORT**

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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