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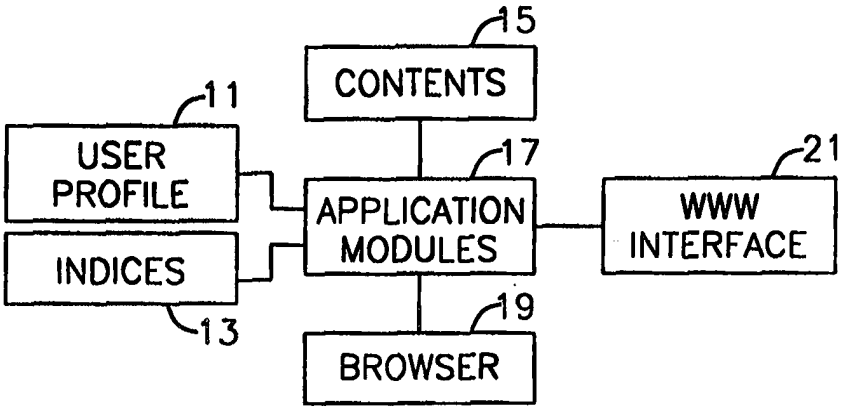
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(54) Title: MULTIPLE MAGAZINE PRESENTATION AND SUBSCRIPTION SYSTEM AND METHODS

(57) Abstract

A multimedia presentation system for selectively presenting magazines and other similar material to a plurality of users. Magazines are initially provided on CD–ROM or DVD to users, who may share the CD–ROM or DVD. The system provides a variety of access schemes to the material, and also monitors user usage of the material.



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MULTIPLE MAGAZINE PRESENTATION AND SUBSCRIPTION SYSTEM AND METHODS

CROSS REFERENCE TO RELATED APPLICATION

This application claims the benefit of the filing date of U.S. Provisional Application No. 60/049,597 filed on June 13, 1997, the disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

The present invention relates generally to multimedia display systems and methods, and specifically, relates to systems and methods for providing multiple magazines to a subscriber.

Text and graphical information have long been provided to readers through the distribution of printed materials. Providing printed material to a plurality of subscribers and others interested in viewing material is both costly and wasteful. Additionally, these materials are not readily available to those who do not subscribe to the materials or otherwise have ready access to various point-of-sale locations for the materials, such as bookstores, newsstands, and the like.

Some information corresponding to the information available on printed matter is now available through the Worldwide Web (Web or WWW). Using the Web as a distribution medium, however, still poses various problems. One problem is that, by its nature, the transmission bandwidth of the Web is limited. That is, very large files, particularly very large graphic files, require inordinate amounts of time to be transmitted over the Web to a user's computer. The delays due to such transmissions serve to limit the amount of information which may be readily provided to users. In addition, searching the Web for information regarding printed matter may be time consuming and otherwise inconvenient to users,

particularly users who are not fully aware of the type of printed matter they desire.

SUMMARY OF THE INVENTION

The present invention therefore provides a method and system for providing information to a user using a multimedia presentation system based on a processor, a display, user input devices, and information in a memory. The memory stores content information corresponding to information previously found in magazines and the like, and profiles pertaining to various users. The application component displays content information to the user based on user profile, and also updates user profiles in response to actions by the user.

The content information may be divided into a plurality of sets information, and the information may correspond to magazines, newspapers and the like. The user profiles contains information pertaining to users and information pertaining to which of the plurality of sets of information users are allowed to view. The information pertaining to which of the plurality of sets of information the user may view include an exclusion list, and inclusion list, and an undesignated list. Additionally, information pertaining to preferences of the user are also stored and provided to a central location for later use by publishers of the content information.

Many of the attendant features of this invention will be more readily appreciated as the same becomes better understood by reference to be following the detailed description considered in connection with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a block diagram of the multimedia system of the present invention;

FIG. 2 illustrates a personal computer system of, and for the use of, the multimedia system of the present invention;

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FIG. 3 illustrates a table of the contents database of the multimedia system of FIG. 1;

FIG. 4 illustrates a block diagram of the user profiles database of the multimedia system of FIG. 1;

FIG. 5 illustrates a block diagram of the indices database of the multimedia system of FIG. 1;

FIG. 6 illustrates a block diagram of the WWW interface module of the multimedia system of FIG. 1;

FIG. 7 illustrates a flow design of the credit authorization process of the WWW interface of FIG. 6;

FIG. 8 illustrates a flow diagram of the subscriptions process of the WWW interface of FIG. 6;

FIG. 9 illustrates a flow diagram of the purchases process of the WWW interface of FIG. 6;

FIG. 10 illustrates a flow diagram of the upload process of the WWW interface of FIG. 6;

FIG. 11 illustrates a flow diagram of the coupon process of the WWW interface of FIG. 6;

FIG. 12 illustrates a flow diagram of the letters process of the WWW interface of FIG. 6;

FIG. 13 illustrates a flow diagram of the update process of the WWW interface of FIG. 6;

FIG. 14 illustrates a block diagram of the application component of the multimedia system of FIG. 1;

FIG. 15 illustrates a flow diagram of the rack process of the application component of FIG. 14;

FIG. 16 illustrates a flow diagram of the categories process of the application component of FIG. 14;

FIG. 17 illustrates a flow diagram of the Table of Contents process of the application component of FIG. 14;

FIG. 18 illustrates a flow diagram of the content mode process of the application component of FIG. 14;

FIG. 19 illustrates a flow diagram of the search process of the application component of FIG. 14;

FIG. 20 illustrates a flow diagram of the file process of the application component of FIG. 14;

FIG. 21 illustrates a flow diagram of the bookmark process of the application component of FIG. 14;

FIG. 22 illustrates a flow diagram of the highlight process of the application component of FIG. 14;

FIG. 23 illustrates a flow diagram of the notepad process of the application component of FIG. 14;

FIG. 24. illustrates a flow diagram of the tag process of the application component of FIG. 14;

FIG. 25 illustrates a flow diagram of the archive process of the application component of FIG. 14;

FIG. 26 illustrates a flow diagram of the user profile process of the application component of FIG. 14;

FIG. 27 illustrates a top level page for the multimedia presentation system of FIG. 1;

FIG. 28 illustrates a category subpage of the multimedia presentation system of FIG. 1;

FIG. 29 illustrates a Table of Contents subpage of the multimedia presentation system of FIG. 1;

FIG. 30 illustrates an article subpage of the multimedia presentation system of FIG. 1;

FIG. 31 illustrates a flow diagram of the flip process of the application component of FIG. 14; and

FIG. 32 illustrates a flow diagram of the TV mode process of the application component of FIG. 14.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 illustrates a block diagram of a multimedia presentation system of the present invention. The multimedia presentation system comprises a user profile database 11, an indices database 13, and a contents database 15. The multimedia presentation system additionally comprises an application component 17, a browser 19, and a Worldwide Web (WWW) interface 21.

In one embodiment, the multimedia presentation is stored and executes on a personal computer (PC) as illustrated in FIG. 2. The PC includes a computer unit 23, including a

microprocessor and memory, a DVD, CD-ROM or other removable memory storage drive 25, a display, and a user input device, illustrated as a keyboard 27. Although only a keyboard is displayed as the user input device, many other user input devices, such a mouses, trackballs, display touchscreen, and infrared and other remote devices, could also be used. The PC additionally has a connection 31 to a telephone network or other communication network, whether utilizing cable, satellite, cellular, or other communication means, for communicating via the Internet or Worldwide Web (WWW).

In the embodiment of FIG. 1, the contents database initially comprises information stored on a DVD, CD-ROM, or other removable memory storage device, and made available to the PC by way of the removable memory storage device drive. The contents database is further updated through the use of Internet or other network connections. The user profile and indices databases are stored in the PC memory.

The application component, also stored in the PC memory, comprises programs executed by the microprocessor for reading the contents, based in part on the user profile and indices database, and for performing other functions. The application component makes information available to the browser, which is also a program stored in the PC memory and executed by the microprocessor, which causes the display of information on the display. The application component further interacts with the WWW interface, also a program stored in the PC memory and executed by the microprocessor, which provides for the transmission and reception of data over the Internet or Worldwide Web, as well as performing further related functions.

The multimedia presentation system provides for the display of a plurality of sets of information, such as magazines, periodicals, newspapers, catalogs and the like. The multimedia presentation system displays a top level page outlining the categories of materials available, and providing further functions, when first started. For example, FIG. 27

illustrates a top level page for a multimedia presentation system presenting a plurality of magazines. The top level page includes a graphic 602, and a number of magazine categories 604 A-G. A graphical user interface (GUI)(not shown), provided by the browser, frames the top level page, as well as other pages. The GUI includes a toolbar. The toolbar allows for the execution of a number of functions described herein, as well as functions commonly made available by graphical user interfaces commonly found on computers. The list of categories allow access to subpages corresponding to the categories. Thus, if a user selects a category, whether by placing a mouse icon over one of the categories and pressing a button on the mouse ("clicking the mouse"), or by other selection methods using various user input devices, a subpage for that category will be displayed.

FIG. 28 illustrates a category subpage. A category subpage includes a prominently displayed default magazine 612. A number of other magazines 614 are also displayed in a "rack" format such that a portion of the cover of each magazine is viewed. Additionally, the category sub page includes a rack tab 616, a categories tab 618 and a Table of Contents (TOC) tab 620. Selection of the rack tab returns the display to the top level page. Selection of the TOC tab causes the Table of Contents for the default magazine to be displayed. Magazines typically have information relating to the articles within the magazine displayed on the cover of the magazine. Selection of the information causes an article subpage to be displayed. Selecting the default magazine over an area not referring to an article within the magazine causes a table of contents subpage to be displayed. Selection of any of the rack magazines causes the selected magazine to be made the default magazine and displayed prominently in the default magazine position, with the prior default magazine being placed in the rack.

FIG. 29 illustrates a Table of Contents subpage. The Table of Contents subpage displays a table of contents listing

article titles 630A-F of the articles within the default magazine. The table of contents subpage also displays a rack tab, a categories tab, and a TOC tab. Selection of the rack tab causes the display to return to the top level page. Selection of the categories tab causes the display to return to the category subpage for the category to which the magazine belongs. If the magazine belongs to multiple categories, then the last category subpage is displayed. If no category subpages have been displayed, then the display displays the category subpage for a category to which the magazine belongs, with a category being chosen by alphabetical order. The text indicating article names in the table of contents provides an article link to the articles within the magazine. Selection of the text causes display of an article subpage displaying the article selected.

FIG. 30 illustrates an article subpage. The article subpage includes article text 650, article graphics 652, and an advertisement 654. The illustrated article subpage is provided as an example only, with the actual position and number of lines of text, graphics and advertisements being variable. The article text, graphics, and advertisement additionally include further links 656 A-C. The additional links may reference other magazine articles in any magazine, including past magazines, allow the user to purchase advertised items, or obtain other or additional information regarding any of the material in the article, graphics, or advertisement.

FIG. 3 illustrates a format for storage of the information comprising the contents database. The information stored in the contents database is organized by magazine, with Mag1 representing a first magazine, Mag2 representing a second magazine, ..., and Magn representing an nth magazine, with the number of magazines stored in the contents limited solely by the storage limit of the memory containing the contents database. The information stored need not be limited to magazines. For example, the information stored may be a

catalog or multiple catalogs, with the magazines denoting departments, i.e. shoes, men's wear, or perfumes, of the catalog or catalogs.

For each of the magazines, Mag1, Mag2, ..., Magn, information denoting banners, captions, stories, advertisements, pictures, videos, audios, and HTML files are stored. The banners, captions, stories, advertisements, and pictures contain information similar to items commonly found in print magazines of today. The format for storing information in the contents database may be otherwise then herein described. For example, advertisers may have a finite number of advertisements which are placed in a large number of magazines. Accordingly, a beneficial storage scheme may be to store each advertisement only once, with pointers indicating proper placement of the advertisement. In one embodiment the information in the contents database is encrypted or "scrambled" such that the information may only be read if an appropriate password is provided. Methods and systems for encrypting data and using passwords are known in the art.

The inclusion of video files, audio files and HTML files provide the ability for further use of the multimedia system and extension of the capabilities of magazines. For example, graphics files may contain individual pictures associated with the text of the articles. The audio information may comprise additional appropriate audio information prepared by the publisher of the magazine to further explain the text or otherwise further enlighten the uses of the multimedia presentation system.

A table showing the format of the user profiles database is illustrated in FIG. 4. In the user profile's database data is associated with users. For each user, the user profiles database includes an exclusion record, an inclusion record, an undesignated record, a personalization record, a localization record, a derived conditions record, an accounting information record and a password. These records are repeated for each user in the user profiles database.

As illustrated, the user profiles database includes data pertaining to a User1, a User2, a User3, ..., and a Usern. Each user represents an individual using a common multimedia system. The exclusion record identifies magazine names, titles, authors, and key words which are not available for display to a particular user. Items appear on the exclusion list for a number of reasons, including failure to subscribe to a particular magazine or parental blockage of a particular category, magazine, or magazine rating. Magazines, or even categories of magazines, may also be unavailable through a parental control feature in one embodiment. The parental control feature provides for the capability of a user to add items to the exclusion list, as well as delete the user added items, through use of a password. Thus, a user (parent) who allows a child to view magazines may prevent access by the child to certain magazines by selecting a parental control function button on a toolbar, providing a password, and entering magazines to be placed on the exclusion list. A similar process may be used to unlock access to these voluntarily excluded magazines. The inclusion record also contains magazine names, titles, authors, and key words identifying articles and magazines to which the user subscribes and which are always available for display to the user. In the event of a conflict between an item corresponding to an item on the exclusion list and an item corresponding to an item in the inclusion list, however, the item will be excluded from viewing. Some items may not be included in either the inclusion or exclusion, lists. These items are placed in the undesignated list and may be viewed by the user only if a link is provided to the item from an article available through the inclusion list.

The localization record contains the user's address, zip code, and phone number. The purpose of the localization record is to provide the capability to provide information based on the user's location. The derived preferences record contains information pertaining to the interaction of an user

with the contents of the magazines. Thus, the usage of magazines, articles within the magazine, of ads within the magazine, the length of time for which a particular page was displayed, and general patterns of magazine usage can be tracked. The account information record contains the user credit card number, an expiration date for the credit card, and account value. The accounting information is to facilitate purchase of additional subscriptions and goods and services.

The information available in the user profile may also be used by the user, magazine publishers, advertisers, or others to generate sets of content for display to particular users. One example of such use of the user profile is in the advertising field. An advertiser may have many products for sale, with different products appealing to people in different areas or people with different tasks. The advertiser may link multiple advertisements to a single location in a magazine, with the specific advertisement selected being a function of information in the user profile. This information may simply relate to the user location, the user's stated preferences or may relate to criteria based on the user's past viewing habits as detailed in the user profile. Another example is that magazine publishers may provide more content than would be expected to appear in any single magazine. Based on a user's locale or preferences, a magazine may more prominently display certain articles, provide increased or decreased article text length, or otherwise provide the user a magazine more suited to the user's individual tastes.

A format of the Indices databases is illustrated in FIG. 5. the indices databases comprise a number of index databases. The index databases include a bookmark database, a highlight database, a notepad database, a tags database, a profile database, and an archives database. The bookmark, highlight, notepad and tags databases provide for increased ease in later location and identification of previously marked items in the content database.

The archives database provides information which allows items in the content database to be more easily located and, when used in conjunction with the information contained in the user profiles, aids in the determination of information for display to a user. The archives database includes a magazine record, a title record, an author record, a date record, a disk I.D. record, a file name record, a location record and a key words record. The magazine record identifies the name of a magazine. The title record identifies the title of an article in the magazine. The author record identifies the author of the article. The date record identifies the date of the article. The Disk ID record identifies the CD-ROM or DVD disk containing the article. The file name record identifies the file name of the file containing the article. The location record identifies the location within the file indicated by the file name record where the article may be found. The keywords record identifies keywords associated with the article.

FIG. 6 illustrates a block diagram of the WWW interface. The WWW interface includes a top level 101 providing a structure for the functions of the WWW interface. These functions are performed by various WWW processes including a credit card services process 103, a subscriptions process 105, a purchases process 107, an upload process 109, a coupons process 111, a letters process 113, and an update information process 115.

A flow diagram of the credit card services process is illustrated in FIG. 7. In step 120 the process determines a requested transaction amount. The requested transaction amount is provided by other processes when the user attempts to complete a transaction. Step 122, the requested transaction amount is compared with a current authorized amount. The credit current authorized amount is maintained in the accounting information record of the user profile. If the requested transaction amount is not greater than the current authorized amount then the requested transaction amount is

subtracted from the current authorized amount in step 124 and the user profile accounting information record is updated with the new current authorized amount. If the requested transaction amount is greater than the current authorized amount then the user is prompted to determine if the user desires to increase the current authorized amount in step 126. Step 128 determines if an additional amount of credit has been authorized by the user. If the user does not authorize additional credit then the process returns. If the user does authorize additional credit then the process of the credit card services requests further authorization for the new credit from a credit agency step 130. Of course, the credit authorization agency may be the provider of the removable storage memory unit containing the content information. Such a provider may also maintain the current authorized amount record for each user as a security measure. This includes contacting the credit agency using a modem and the telephone connection allowing access to the Internet or Worldwide Web. In step 132 the process determines if the credit agency authorizes the additional credit. If no additional credit is authorized then the process returns. If additional credit is authorized then the current authorized amount maintained in the accounting information record of the user profile is updated with the additional amount of authorized credit in step 134. The credit card services process then completes the transaction and subtracts the requested transaction amount from the current authorized amount and updates the accounting information record of the user profile with the new current authorized amount in step 124. The credit card services process then returns.

FIG. 8 illustrates a flow diagram of the subscriptions process of the WWW interface. In step 140 the process determines the name of a requested magazine subscription. This is accomplished by prompting the user to enter a magazine name or to select a magazine name from a list of magazine names. The listed magazines is determined by examining the

magazine record in the archive database of the indices databases. In step 142 the process determines the costs associated with the requested magazine subscription. This information is also maintained in the magazine record of the archived database of the indices databases. The subscriptions process then requests transaction validity from the credit card services process in step 144. In step 146 the subscription process determines if the credit card services module is determined whether the transaction may proceed. If the transaction has not been approved, then the process exits. If the transaction is approved then the transactions process provides the user a password for the user to enter to update the user profile exclusion, inclusion and undesignated fields so that the user may access the requested magazine. The subscription process then returns.

FIG. 9 illustrates a flow diagram of the purchases process of the WWW interface. In set 150 the process determines the requested purchase item and the cost of the requested purchase item. This information is maintained in the advertisements record of the contents database. Alternatively, a central service accessible over the Web may maintain such information. In step 152, the process requests transaction approval from the credit card services module. In step 154 the process determines if the transaction has been approved. If the transaction has not been approved, the process returns. If the transaction has been approved then the process transmits the transaction information to a predefined Web address in step 156. The predefined Web address is stored on the removable memory storage unit, and points to a central service which processes user orders. The transaction information includes the identification and quantity of the goods or services order, credit card information, providing for payment for the goods or services and the users address as indicated in the user profiles database. The process then returns.

FIG. 10 illustrates a flow diagram of the upload process of the WWW interface. The upload process executes as part of the exit process of the multimedia system although the upload process may also execute periodically or upon a trigger event, such as the sending of a letter to the editor. Other upload schemes are of course possible. For example, the upload could occur every time the Web or Internet is accessed, or at preset times, or through a variety of other schemes known to those of skill in the art. In step 160 the process uploads the contents of the user profiles database to a defined Worldwide Web address stored on the removable memory device. The process then returns.

FIG. 11 illustrates a flow diagram of the coupon process of the WWW interface. The coupon process executes when a user selects a coupon for printing. The coupon process identifies the coupon to be printed in step 170. In step 172 a coupon process determines whether the user is allowed to print the coupon. For example, users may be limited in the number of times they are permitted to print a particular coupon, or certain coupons may only be allowed to be printed for users in specified geographic zones. In such instances, the coupon process would examine the user profile to determine if the user had previously printed a particular coupon, and if so, how many times. The coupon process may also examine a user profile to determine the user's geographic location based on user zip code or other geographic information. If the user may not allowably print the coupon, the process returns. The process then determines if the coupon is valid in step 174. For example, the coupon may be invalid because the date the coupon is requested is past the expiration date of the coupon. If the coupon is not valid then the process returns. If the coupon is valid, then the coupon is printed, with a numeric identifier identifying the user imprinted on the coupon. Printing an identifier indicating a particular user who has printed a coupon allows a manufacturer or other party to track actual usage of their coupon at a later time. The process

then stores data regarding the coupon selected by the user and the user profile for later uploading in step 178. This information is also available by way of the user profile process, and either the coupon process or the user profile process may be used to acquire such information. The process then returns.

FIG. 12 illustrates a flow diagram of the letters process of the WWW interface. The letters process executes when the user selects the letter to the editor option while perusing a magazine article. In step 180 the process determines whether the user is attempting to send a letter to the editor or open a response from the editor to a previous letter. If the user is attempting to send a letter to the editor then the process identifies the e-mail address to send the letter in step 182. The process determines this information based on the editor e-mail address of the magazine record of the archive index or the indices database. In step 184 a process retrieves the text the user desires to send to the editor. This may be accomplished through the use of a pop-up window, or the user may specify a text file. In step 186 the process transmits the letter to the editor to the previously determined e-mail address. The process then returns. If the user is attempting to open a response to a letter from the editor, then the process identifies their response in step 188. In step 190 the process displays the response from the editor to the letter to the editor. This may occur in a pop-up window or through some other display method known in the art. The process then returns.

FIG. 13 illustrates a flow diagram of the update process of the WWW interface. The process executes at initial user log on. In step 192 the process identifies the user. In step 194 the process forms an update list. The update list comprises all the magazines on the user's inclusion or undesignated list, excluding those on the user's exclusion list. The process then determines if the update list is empty in step 196. If the update list is empty the process returns.

If the process determines that the update list is not empty then the process contacts the update address for the first magazine on the list in step 198. The update address for the magazine is determined by examining the update address for the magazine in the archive index of the indices database. The update address responds by providing the process an update date. The process compares this update date with the date of the last update to the magazine in step 200. The date of the last update is determined by examining the last update field for the magazine in the archive index or the indices database. If the date of the last update is the same as or prior to the update date then the process removes the magazine from the update list and returns to step 196. If the update date is more recent then the date of the last update then the process downloads the updated magazine information in step 202. The process then updates the date of the last update field in a further magazine and in the archive index of the indices database in step 204. The magazine is then removed from the update list and the process returns to step 196. Thus, the update process sequentially updates all magazines to which the user has access or whenever the user logs on. The update process may be accomplished as a background task so that the multimedia system is not otherwise unavailable for extended periods.

FIG. 14 is a block diagram of the application component. The application component provides a top level 230 providing a structure for the functions of the application component. These functions include a rack process 231, a table of contents process 232, and a categories process 233 for sequentially selecting an article from a particular magazine. A search process 243 is provided to provide a method of locating articles from various magazines using search criteria. Article contents are available to the user through a content, or article, mode process 237, a flip mode process 241, and a TV mode process 240. The content mode process is provided to allow users to peruse specific articles, and make

selections and undertake other actions while perusing the article. The flip mode process 241 is provided to allow users to scan magazines, even unsubscribed to magazines, much as individuals may flip through a magazine at a magazine rack prior to purchase of the magazine. The TV mode process 240 is provided to allow users to view various magazines in locales in which individual users may not provide input as to magazines chosen, or otherwise provide user comments. A bookmark process 247, a highlight process 249, a notepad process 251, and a tagging process 253 are provided to allow users to mark or otherwise tag articles and sections of articles to make further reading in the future easier to accomplish. A file articles process 245 is provided to allow the user to store articles in as separate files on the computer for later use. An e-mail process 250, a fax process 254, and a print process 252 are provided to allow the user to e-mail or fax articles or other material to others, or to print articles or other material. An archive process 255 is provided to properly prepare the archive index of the indices database. A setup profile process 257 is provided to perform the initial setup of a new user, as well as to acquire and maintain data on user actions.

FIG. 15 illustrates a flow diagram process of the rack process and the application component. In step 210 the process determines which magazines are excluded for the user. In step 212 the process determines if an entire category, such as the adult category, is excluded for the user. If an entire category is excluded then the process removes the excluded category from the category list in step 214. If no entire category is excluded, or after removing the excluded category from the category list, the process provides a list of categories for display in step 216. The process then determines if a category has been selected in step 218. If a category has been selected then the process issues a call to the categories module. If no category has been selected, then the process determines if requests to exit process has been

made in step 220. If a request to exit process has been made then the process returns. If no request to exit has been made then the process returns to step 218.

FIG. 16 illustrates a flow diagram of the categories process of the application component. In step 270 the process determines which category has been selected by the user. Category selection may be accomplished from the top level page illustrated in FIG. 27 by placing a mouse icon over text corresponding to a category and "clicking" the mouse. In step 272 the process determines which magazines in the category are not excluded. In step 274 the process determines which of the non-excluded magazines in the category is the default magazine. This information is determined by examining the personalization fields of the user profile. If no magazine is indicated as being the default magazine in the user profile then the process merely determines in alphabetical, or random, basis which magazine to select as the default magazine. Of course, many other methods could be used, such as determining the default magazine based on a default magazine field provided with the removable memory device, with such a list determined on the basis of payments by the magazine to the producer of the removable memory device. In step 276 the process provides the default magazine and the list of non-excluded magazines for display. The default magazine is displayed in a prominent position on the screen, and the list of the non-excluded magazines are displayed alongside the default magazine in rack format, such as is illustrated in FIG. 28. In step 278 the process determines if a non-default magazine has been selected by the user. If a non-default magazine has been selected then process makes the selected magazine the default magazine in step 280 and returns to step 276. If no nondefault magazine has been selected then the process determines if a default magazine selection has occurred in step 282. If such a selection has occurred then the process issues a call to the magazine module of the application component. If no default

magazine selection has occurred then the process determines if a return to the categories screen has been selected in step 284. If a return to the category screen has been selected then the process returns. Otherwise, the process returns to step 278.

A flow diagram of the Table of Contents (TOC) process of the application component is illustrated in FIG. 17. In step 300 the process determines if an article link has been selected from the categories subpage. This is accomplished by selecting text relating to an article on the cover of the magazine. If no article link has been selected then the process displays the table of contents for the magazine in step 302. In step 304 the process determines if a selection by the user has been made. If no selection by the user has been made then the process waits for a selection to be made. If a selection has been made then the process determines in step 306 if an article link has been selected from the table of contents. This is accomplished by the user "clicking" with the mouse on text pertaining to an article. If the user has selected anything other than an article link from the table of contents the process returns. If the user has selected an article link, whether in step 306 or in step 300, the process issues a call to the content mode process.

FIG. 18 illustrates a flow diagram of the content mode process. In step 310 the process determines the location on the removable memory storage of the selected article and associated items. The associated items include items such as captions, advertisements, pictures, videos, audios, and HTML files associated with the article. The location of the selected article and associated items are determined using data in the archive index of the indices database. If the selected article is found on removable memory storage unit other than one currently available to the multimedia presentation system then the process provides an indication to the user of the identification of the removable memory storage unit containing the selected article or information. The

process then displays the selected article and associated items in step 312. The process then waits for a selection to be made in step 316. The possible selections which may be made are a link selection, a purchase selection, a coupon selection, a letter selection, and an exit selection. The link selection occurs when the user selects a linked item in the selected article. The linked item may be another article in the same magazine, an article in a different magazine, or an article in past magazines. If the selection corresponds to a linked selection then the process makes the linked item the selected article in step 318 and returns to step 310. The article may allow users to make purchases of items, advertisements associated with the article may also allow direct purchases. Accordingly, if the user selects such a purchase selection, the process calls the purchase process of the WWW interface. Similarly, the article or associated advertisements may present coupons for the user. Accordingly, if the selection corresponds to a coupon item, then the process issues a call to the coupon process of the WWW interface. For every article, a letter to the editor option is also provided. If the user selects the letter to the editor option then the process issues a call to the letter process of the WWW interface in step 324. If the user selects the exit selection then the process returns.

FIG. 19 illustrates a flow diagram of the search process. The search process executes when the user selects the SEARCH button on the toolbar displayed by the browser. The browser then presents a pop-up window from which the user may either provide a search criteria or select from the index. In step 342 the process determines whether the user is using an index search or a keyword search. If the user is using a keyword search, the process presents a request for search criteria to the user. The user then provides search criteria. The search criteria may be in the form of search words limited by boolean operators, or in the form of a statement requesting information, which may be called a user-friendly search

criteria format. If the search criteria is not in the form of search words linked by boolean operators then the process automatically pauses the user input into a boolean statement, and methods for doing so are well known in the art. The process performs a search using the search criteria in step 346. In one embodiment the search is performed by searching the archive index of the indices database. Of course, as the archive index is updated with additional information each time a new removable storage unit is used by the system, or when updates are received over the Internet or Web, the search may locate articles or other information not immediately available to the user of the presentation system. In such a circumstance the system shall prompt the user with the identification of the removable memory storage unit containing the information, if available to the user, or prompt the user to purchase the appropriate magazine or article. In another embodiment the search encompasses both material in the archive index and the full text of all of the material available to be multimedia presentation system. In step 348 the process presents the results of the search to the user.

If the user selects an index search the process presents an index to the user in step 350. The user then enters an area in the index of interest to the user. In step 352 the process uses the area of interest to the user to present a selection from the index to the user.

Both the selection from the index and the search results provide a list with links to articles. In step 354 the process determines if an article link has been selected. If an article link has been selected, then the process calls the content mode module of the application component. If an article link has not been selected, the process determines if search has been reselected in step 356. If search has been reselected, the process returns to step 340. Otherwise, the process determines if exit has been selected in step 358. If

exit has been selected, the process returns. If exit has not been selected, the process returns to step 354.

FIG. 20 illustrates a flow diagram of the file article process of the application component. In one embodiment an article may only be filed a limited number of times based on criteria established by the publisher of either the magazine containing the article or the article. The number of times an article may be filed, which may be zero times, is included with the magazine or article information on the removable memory storage unit or with the material updated over the Web, as appropriate, and stored by the archive process in the archive index. A file article module stores articles selected by the user to the user's computer. In step 360, the process determines the path name for storing the article. The path name defaults to a path name selected by the publisher of the magazine containing the article. The user, however, may enter a different path name. In step 362, the process determines whether the entire article or merely a selected portion of the article is to be filed. If the entire article is to be saved in a file, then the process saves the article in the file and step 366. If only a portion of the article is to be saved in a file, then the process saves the article in the file in step 364. The process then returns.

In another embodiment material in a magazine is automatically saved to a file, either as a result of a user entry in the preferences record of the user profile or as a result of a magazine publisher embedding an automatic "push" command in an article. In one instance of such an automatic file scenario, the user or publisher specifies the default file name and path so as to create a complete book or compilation of material over time. For example, a cookbook publisher over time may provide sufficient recipes for desserts such that creation of a book of dessert recipes is formed on the users computer automatically.

Articles may also be e-mailed, printed, or faxed in a manner similar to the manner by which articles are filed.

Thus, the article process in one embodiment includes the capability to e-mail, print, or fax materials utilizing processes of the type described by the file article process.

FIG. 21 illustrates a flow diagram of the bookmark process of the application component. The bookmark function allows the bookmarking of a selected article to increase the ease in leader returning to that article. In step 368 the process determines if a bookmark has been selected. When a bookmark has been selected, then a process marks the bookmark article as a selected article in step 370 and then returns. If no bookmark is selected the process stores an indication of the current article in the bookmark database of the indices database in step 372. The process then returns.

FIG. 22 illustrates a flow diagram of the highlight process of the application component. The highlight module allows portions of articles to be highlighted, with the indication being stored for each user as to highlighted text. In step 376, the process determines a portion of the article selected for highlighting. In step 378, the process stores an indicator, along with an indication of the user, indicating the selected text in the highlight database of the indices databases. The process then returns.

FIG. 23 illustrates a flow diagram of the notepad process of the application component. The notepad module allows users to associate text input by the user with specific article. In step 380 the process presents a pop-up window which allows the user to input text. In step 382 the process gets the notepad text input by user. In step 384 the process stores the notepad text in an article identifier in the notepad database in the indices database. The process then returns.

FIG. 24 illustrates a flow diagram of the tag process of the application component. A tag module provides a capability for highlighting an entire article. In step 388, a process stores an article identifier identifying the article currently displayed in the tag database of the indices databases. The process then returns.

FIG. 25 illustrates a flow diagram of the archive process of the application component. The archive process scans the content information and stores information in the archive database of the indices databases. In one embodiment the content is encrypted or "scrambled" and requires a password or other key in order to be viewed by the user. In such an embodiment only content available to the user is scanned by the process. In this embodiment, however, magazine publishers may still ensure that information regarding their magazines is available in the archives index of the indices databases so that search requests will indicate the relevancy of articles in their magazine to possible subscribers. This is accomplished by providing a special archive file, available in unencrypted form, which the archive process may either scan or incorporate in bulk in the archives index.

In step 410 the archive process identifies a magazine in the content information. The process then scans the information pertaining to the magazine and stores the appropriate data in the archive database in step 412. The process determines the title, author, and date for each article as part of the step. The process also determines the categories under which to place the magazine, the e-mail address of letters to the editor, and the Web address from which to receive updates based on information provided by the publisher of the particular magazine. The date of the magazine is used to store a new date of last update. A "crawler", such as those used to prepare search data files used in conjunction with search engines for the Worldwide Web, and which are well known to those skilled in the art, is used to generate keywords for each article. Preferably, the "crawler" executes as a background task, thereby allowing use of the multimedia presentation system during generation of the keywords. Additionally, the process determines the disk I.D., file name, and location on the disk of the article. In step 414 the process determines if all magazines have been

scanned. If all magazines have been scanned the process returns, otherwise the process returns to step 410.

A flow diagram of the user profiles process of the application component is illustrated in FIG. 26. In step 420 the process determines if a new user needs to be set up. If a new user needs to be set up the process requests user details in step 422. In step 423 the process provides user details in the user profile database. Step 424 the process provides user password, and then the process returns. If a new user is not being set up then the process assumes that it has been called as part of a background process by user actions. Accordingly, in step 426 the process logs user actions. In step 428 the process determines if the user is exiting. If the user is not exiting the process continues to log user actions as part of the background process. If the user is exiting, the process stores information pertaining to the user's actions in the user profile in step 430. Thus, the user profiles process provides the multimedia presentation system the capability to monitor user usage of the system and the information therein, and to provide usage information to a central provider for modification of the materials provided to the user. The process then returns.

FIG. 31 illustrates a flow diagram of the flip mode process. In step 500 the process determines if FLIP has been selected. If FLIP has not been selected the process returns. If FLIP has been selected then the process determines in step 502 if a magazine or article has been selected. If an article or magazine has been selected then the process determines if the magazine allows FLIP access in step 504. This information is provided on a per magazine basis as part of the data on the removable storage memory unit. In addition, certain categories of magazines, notably magazines in the adult category, are not available through the FLIP function. If the magazine does not allow flip access the process returns to step 502. If the magazine allows flip access the process determines in step 506 if the magazine

publisher has provided a list of items available through in flip mode. If the magazine publisher has not provided such a FLIP list, then the process creates a list of first pages of articles within the magazine in step 508 with the first pages of articles comprising the FLIP list. In step 510 the process displays the first item on the FLIP list. Thereafter the process determines if the FLIP button has been selected in step 512 or whether the process should exit in step 514. If the FLIP button has been selected then the process displays the next item on the FLIP list in step 510. If the process should exit then the process returns.

FIG. 32 illustrates a flow diagram of the TV mode process. The TV mode provides the multimedia presentation system the capability to present magazines and magazine-related information automatically to those either unable to provide user input, such as those in doctor's waiting rooms, or those who desire automatic presentation of information. In step 530 the process generates a magazine list from the user's preferences. In step 532 the process generates a list of graphics, audios, and videos from the magazine list. Alternatively, publishers of magazines may provide their own list of materials. The purpose of the list of graphics, audios, and videos is to provide a list of materials suitable for viewing at a distance, and which are intended to inform and entertain viewers. In step 534 the process begins to sequentially display graphics and videos, as well as play audio items on the list, in a sequential manner. If the user provides input to the multimedia system during the sequential display/play of items, then the process recognizes this in step 536 and stops the sequential display in step 538. A timer is then started in step 540, and the process monitors further user input in step 542. Every time the user provides input into the system, the process restarts the timer. If the timer elapses, which is monitored by the process in step 546, the process once again begins displaying the items on the list.

The browser provides the display interface through the multimedia presentation system. Browsers comprising graphical user interfaces (GUIs) are known and understood by those of skill in the art. Commonly used browsers often include the use of subwindows, pop-up windows, and other display methods. The browser includes a tool bar of the type commonly found in GUIs. The tool bar includes buttons for selection of various functions of the multimedia presentation system. The functions available through the toolbar include a modify user preferences function, an increase credit function, a subscribe function, a purchase function, a coupon function, a letter to the editor function, a notepad function, file, e-mail, fax, and print functions, a bookmark function, a highlight function, a tag function, a search function, a flip function, and a TV mode function. These functions, and the processes which describe these functions, are further described herein.

Selection of a modify user preferences button causes the user preferences process to execute. Selection of an increase credit button cause the credit process to execute. The credit process, of course, may also execute as a result of other processes. Selection of a subscribe button causes the subscription process to execute. Selection of a purchase button causes the purchase process to execute. Selection of a coupon button causes the coupon process to execute. The subscription process, the purchase process, and the coupon process may also be caused to execute the selection of appropriately indicated text otherwise displayed by the multimedia presentation system, particularly during execution of the flip mode process or the content mode process. The toolbar buttons for selection of these functions, however, provides a simple "one touch" way of purchasing material or obtaining services.

Selection of a letter to editor button causes execution of the letter process. Selection of a file button, an e-mail button, a fax button, or a print button causes execution of, respectively, the file process, e-mail process, the fax

process or the print process. Selection of a bookmark button causes execution of the bookmark process. Selection of a highlight button causes execution of the highlight process. Selection of a tag button causes execution of the tag process. Selection of a search button causes execution of the search process. Selection of a flip button causes execution of the flip process and entry into the flip mode. During flip mode, however, selection of the flip button causes display of the next item in the flip list, as is described in the explanation of the flip mode. Selection of the TV mode button causes execution of the TV mode process. Thus, the toolbar provides ready and easy access to many of the functions of the multimedia presentation system.

Although the invention has been described in certain specific embodiments, many other additional modifications, substitutions, and variations will be apparent to those of skill in the art. It is therefore to be understood that this invention may be practiced otherwise than is specifically described. Therefore the present embodiments of the invention should be considered in all respects as illustrative and not restrictive, the scope of the invention to be indicated by the following claims rather than the foregoing description.

IN THE CLAIMS:

1. a multimedia presentation system comprising:

a processor;

a display;

a memory storing content information and a user profile;

an application component for displaying the content information on the display to a user of the multimedia presentation system and for updating the user profile.

2. The multimedia presentation system of claim 1 wherein the content information is comprised of a plurality of sets of information, the user profile contains information pertaining to the user, the information pertaining to the user including information pertaining to which of the plurality of sets of information the application component allows to be displayed to the user.

3. The multimedia presentation system of claim 1 wherein the application component further creates indices to the content information based on the content information and stores the content information in the memory.

4. The multimedia presentation system of claim 3 wherein the memory comprises read-only memory and read/write memory, and the content information is stored in the read-only memory and the indices are stored in the read/write memory.

5. The multimedia presentation system of claim 2 wherein the information pertaining to which of the plurality of sets of information the application component allows to be displayed to the user comprises an exclusion list of the sets of information not allowed to be displayed to the user.

6. The multimedia presentation system of claim 2 wherein the information pertaining to which of the plurality

of sets of information the application component allows to be displayed to the user comprises an inclusion list of the sets of information allowed to be displayed to the user.

7. The multimedia presentation system of claim 2 wherein the user profile includes a user account with a value, each of the sets of information is allocated a cost, and the application determines the information pertaining to which of the plurality of sets of information the application component allows to be displayed to the user based on the value and the cost.

8. The multimedia presentation system of claim 2 wherein each of the sets of information is allocated a cost, the information pertaining to which of the plurality of sets of information the application component allows to be displayed to the user comprises either an exclusion list of the sets of information not allowed to be displayed to the user or an inclusion list of the sets of information allowed to be displayed to the user, and a user account with a value, and the application component determines which sets of information are allowed to be displayed to the user based on the exclusion list or inclusion list, the cost, and the value.

9. The multimedia presentation system of claim 8 wherein the user profile includes information pertaining to preferences of the user.

10. The multimedia presentation system of claim 9 wherein the application component creates subsets of the sets of information based the information pertaining to the preferences of the user.

11. The multimedia presentation system of claim 10 wherein the information pertaining to the preferences of the user comprises geographic information.

12. The multimedia presentation system of claim 10 wherein the information pertaining to the preferences of the user is determined by the application component based on information previously displayed to the user on the display by the application component.

13. a multimedia presentation system comprising:

a read-only memory containing a user profile, contents containing sets of information; and

a program module which reads the user profile and the indices, and, based on the user profile and the indices, determines which sets of information to read.

14. The multimedia presentation system of claim 13 wherein the user profile contains subscription information and preference information, and the program module determines which sets of information to read based on the subscription information, the preference information, and the indices.

FIG. 1

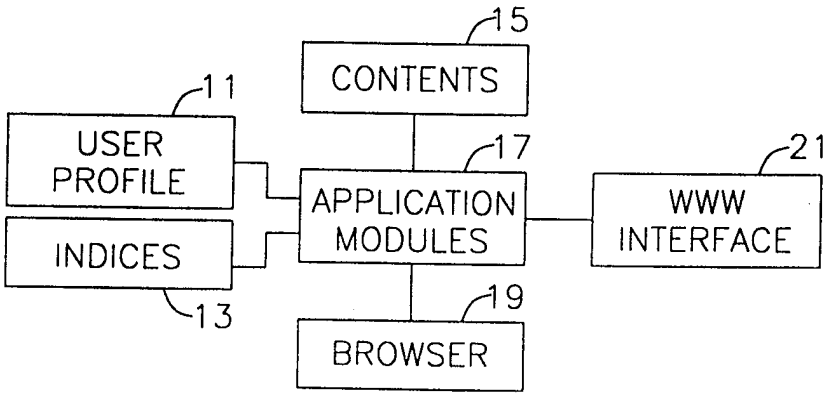

15
CONTENTS
11
USER PROFILE
17
APPLICATION MODULES
21
WWW INTERFACE
INDICES
13
19
BROWSER

FIG. 2

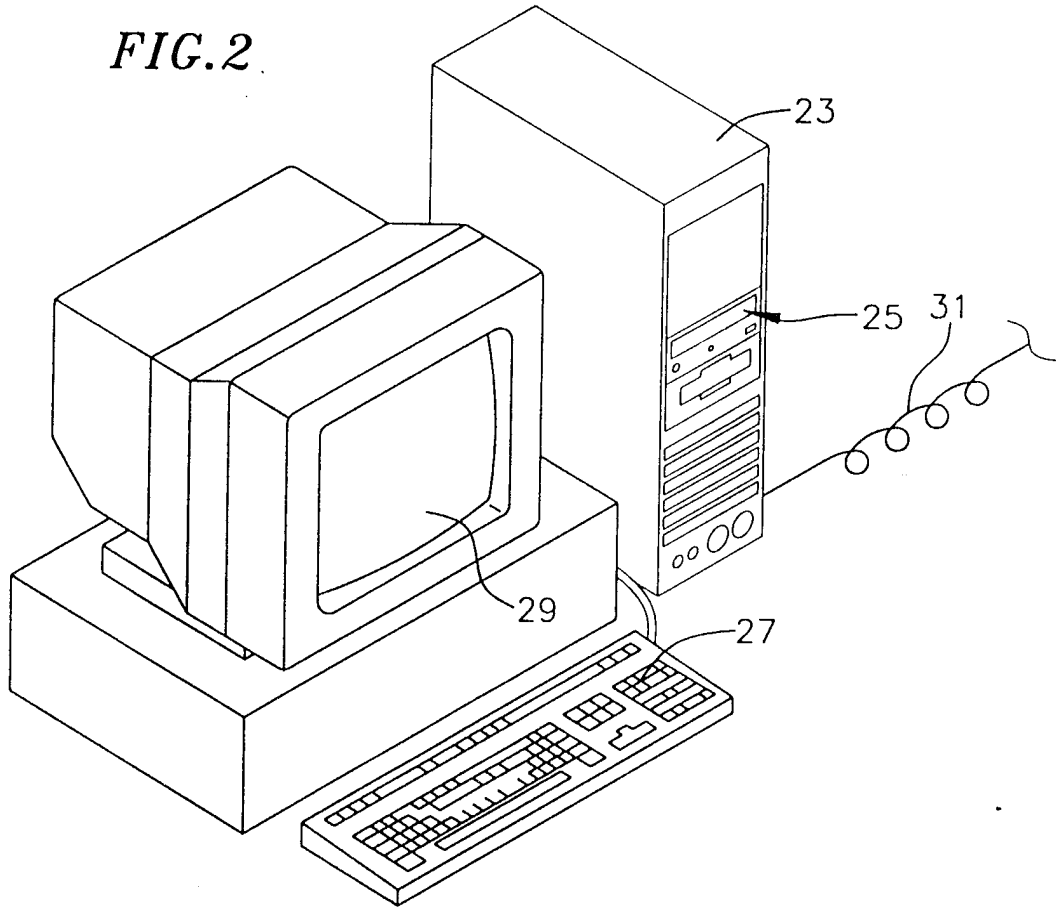

23
25
31
29
27

FIG. 3

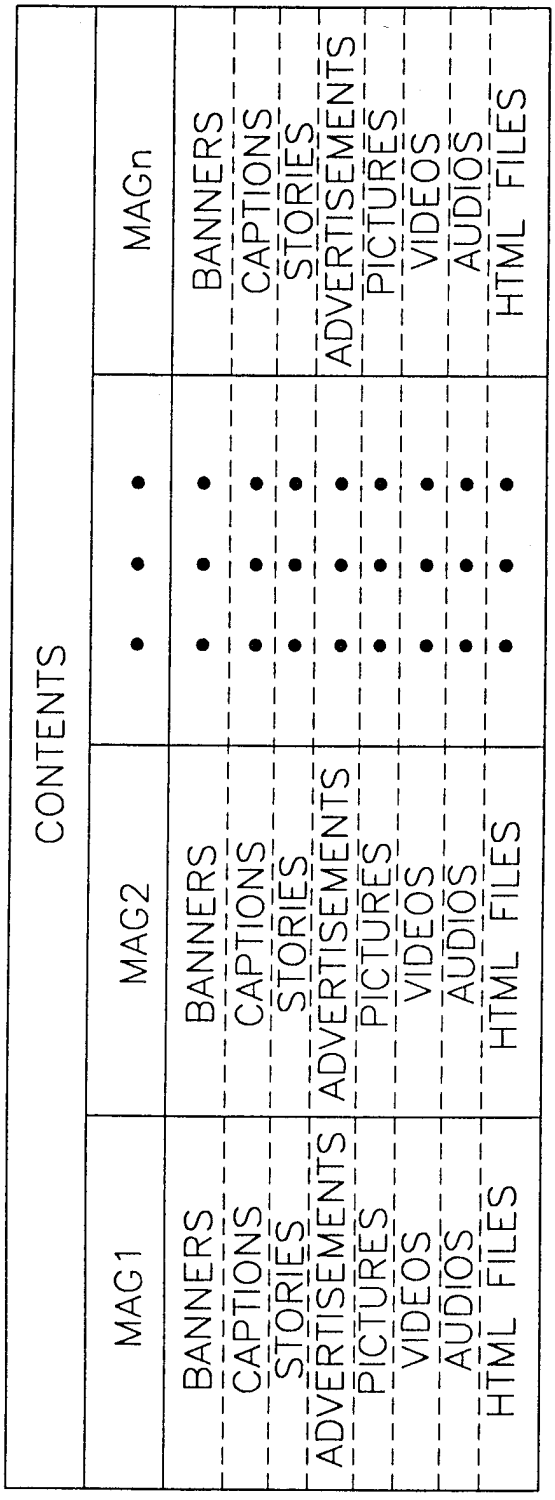

CONTENTS
MAG1
MAG2
MAGn
BANNERS
CAPTIONS
STORIES
ADVERTISEMENTS
PICTURES
VIDEOS
AUDIOS
HTML FILES

FIG. 4

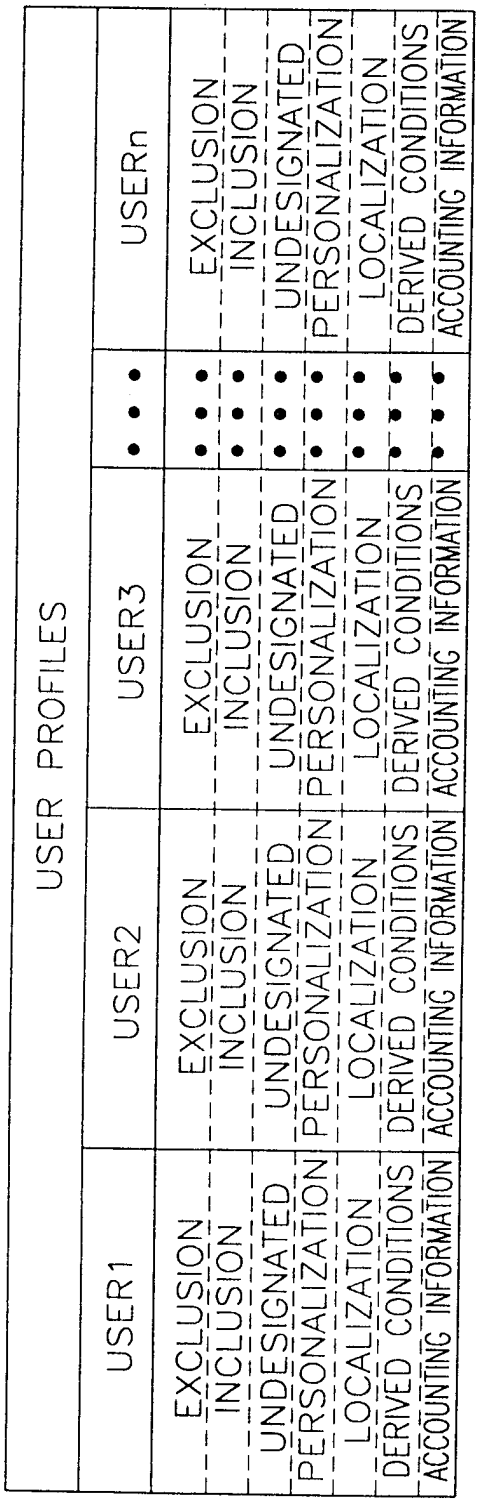

USER PROFILES
USER1
USER2
USER3
USERn
EXCLUSION
INCLUSION
UNDESIGNATED
PERSONALIZATION
LOCALIZATION
DERIVED CONDITIONS
ACCOUNTING INFORMATION

FIG.5

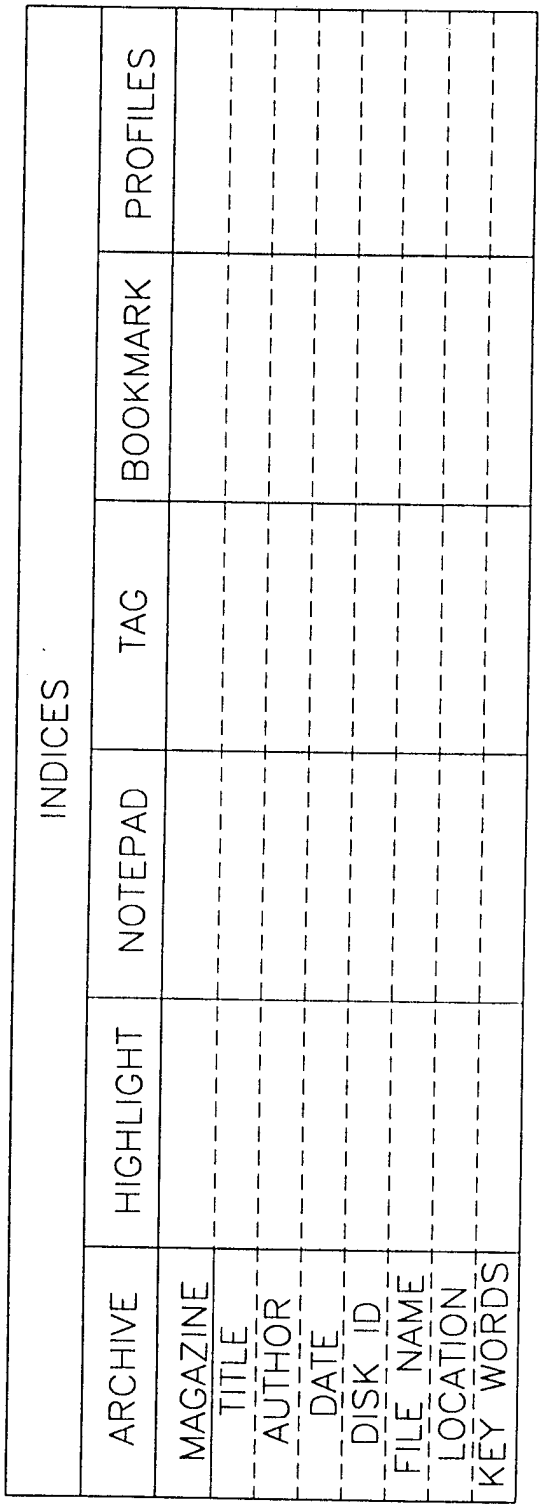

INDICES
ARCHIVE
HIGHLIGHT
NOTEPAD
TAG
BOOKMARK
PROFILES
MAGAZINE
TITLE
AUTHOR
DATE
DISK ID
FILE NAME
LOCATION
KEY WORDS

FIG. 6

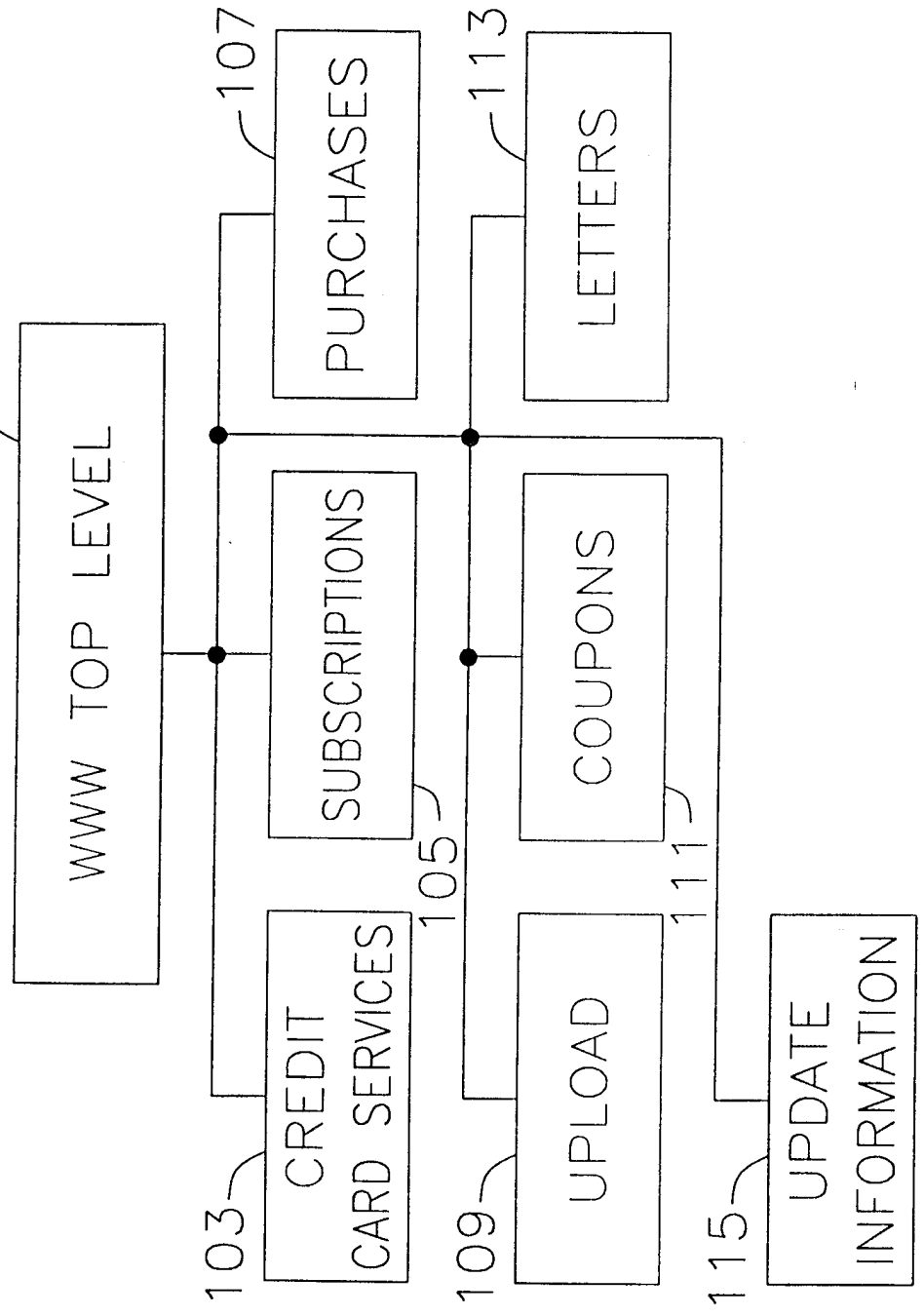

107
WWW TOP LEVEL
107
PURCHASES
113
LETTERS
105
SUBSCRIPTIONS
COUPONS
111
103
CREDIT CARD SERVICES
109
UPLOAD
115
UPDATE INFORMATION

FIG. 7

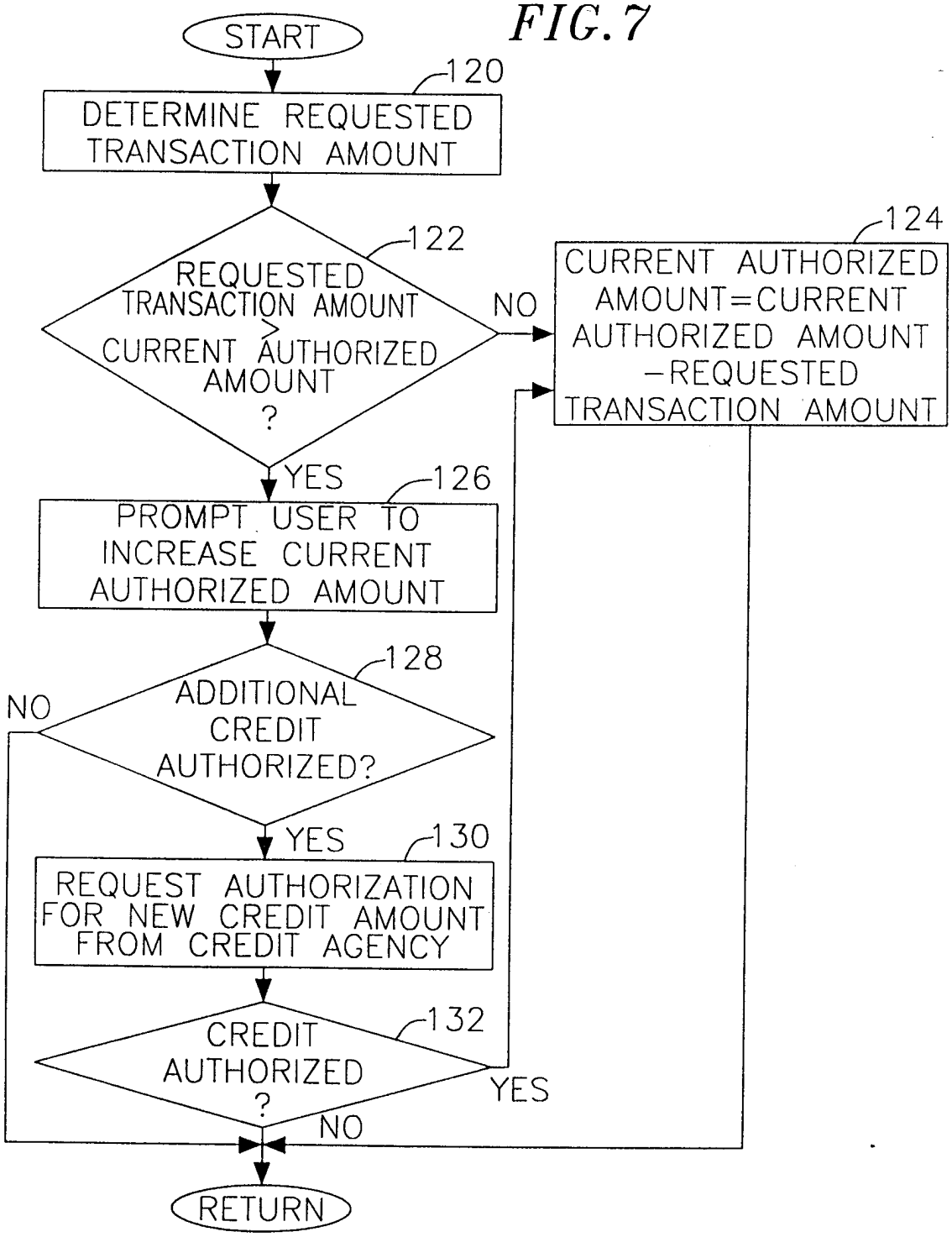

START
120
DETERMINE REQUESTED TRANSACTION AMOUNT
122
REQUESTED TRANSACTION AMOUNT > CURRENT AUTHORIZED AMOUNT ?
NO
124
CURRENT AUTHORIZED AMOUNT=CURRENT AUTHORIZED AMOUNT -REQUESTED TRANSACTION AMOUNT
YES
126
PROMPT USER TO INCREASE CURRENT AUTHORIZED AMOUNT
128
ADDITIONAL CREDIT AUTHORIZED?
NO
YES
130
REQUEST AUTHORIZATION FOR NEW CREDIT AMOUNT FROM CREDIT AGENCY
132
CREDIT AUTHORIZED ?
YES
NO
RETURN

FIG.8

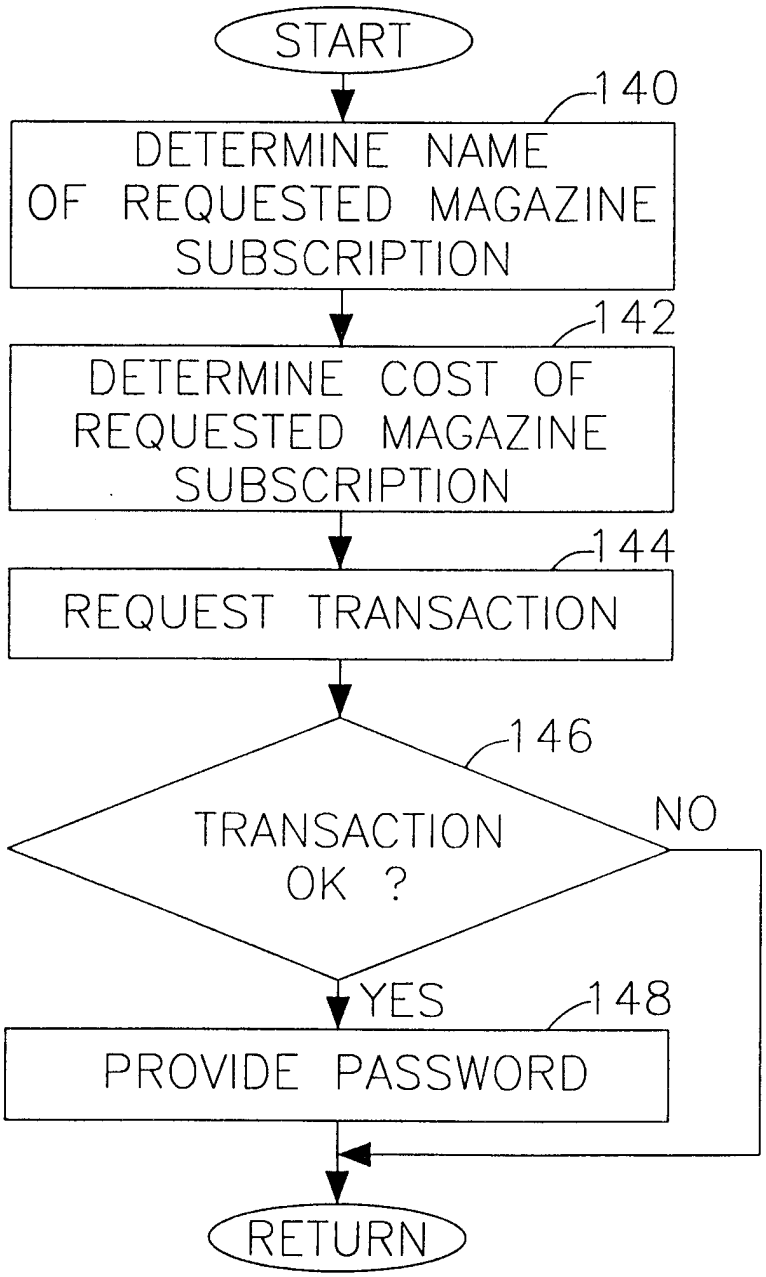

START
140
DETERMINE NAME OF REQUESTED MAGAZINE SUBSCRIPTION
142
DETERMINE COST OF REQUESTED MAGAZINE SUBSCRIPTION
144
REQUEST TRANSACTION
146
TRANSACTION OK ?
NO
YES
148
PROVIDE PASSWORD
RETURN

FIG. 9

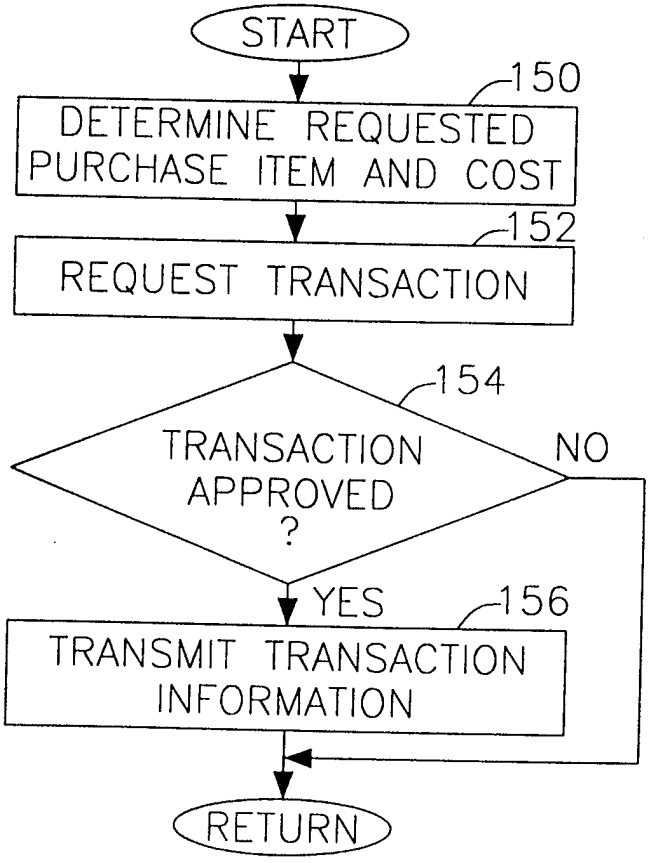

START
150
DETERMINE REQUESTED PURCHASE ITEM AND COST
152
REQUEST TRANSACTION
154
TRANSACTION APPROVED ?
NO
YES
156
TRANSMIT TRANSACTION INFORMATION
RETURN

FIG. 10

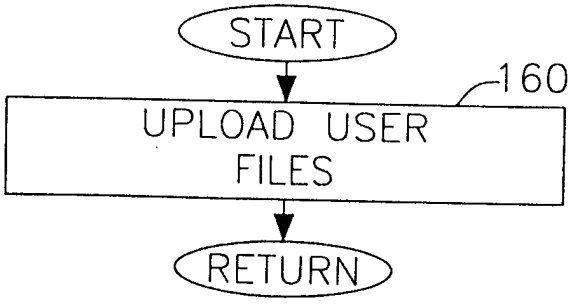

START
160
UPLOAD USER FILES
RETURN

FIG. 11

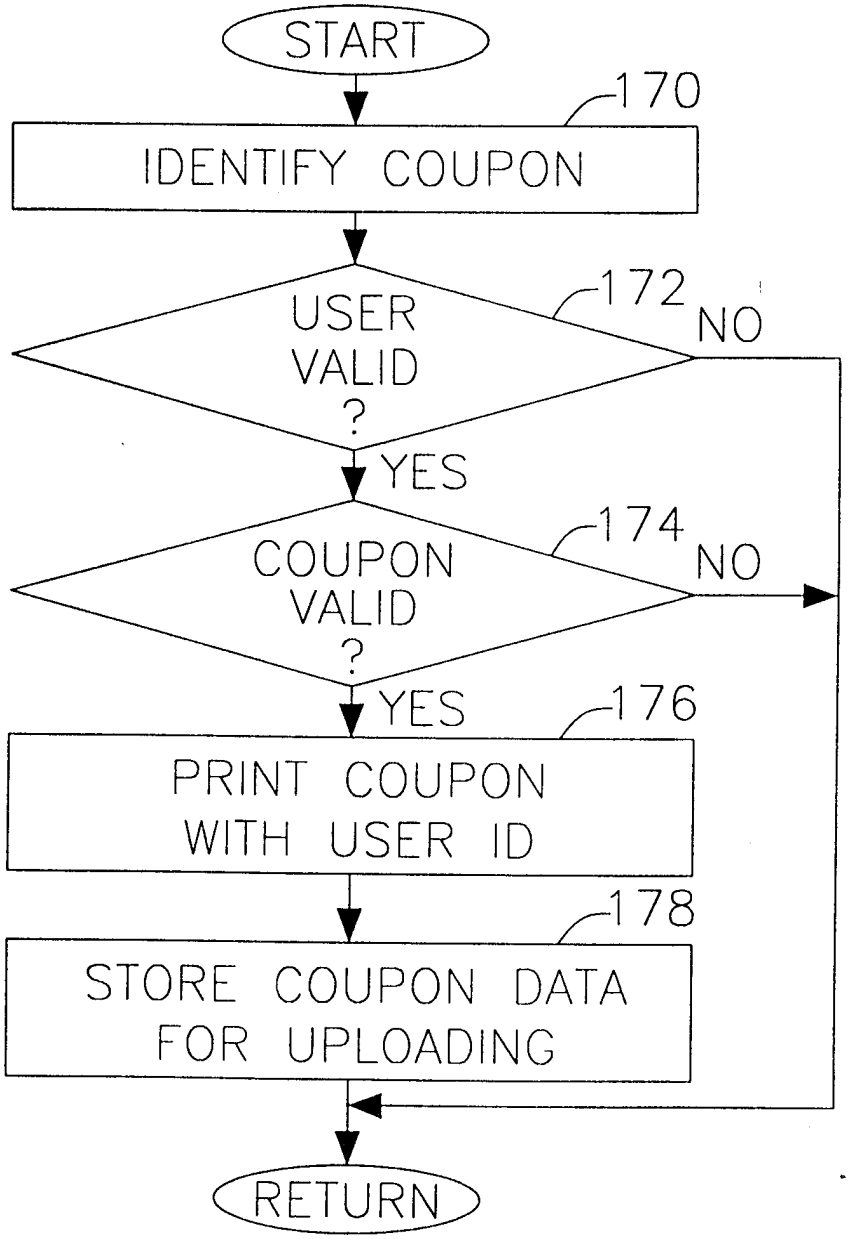

START
170
IDENTIFY COUPON
172
USER VALID ?
NO
YES
174
COUPON VALID ?
NO
YES
176
PRINT COUPON WITH USER ID
178
STORE COUPON DATA FOR UPLOADING
RETURN

FIG. 12

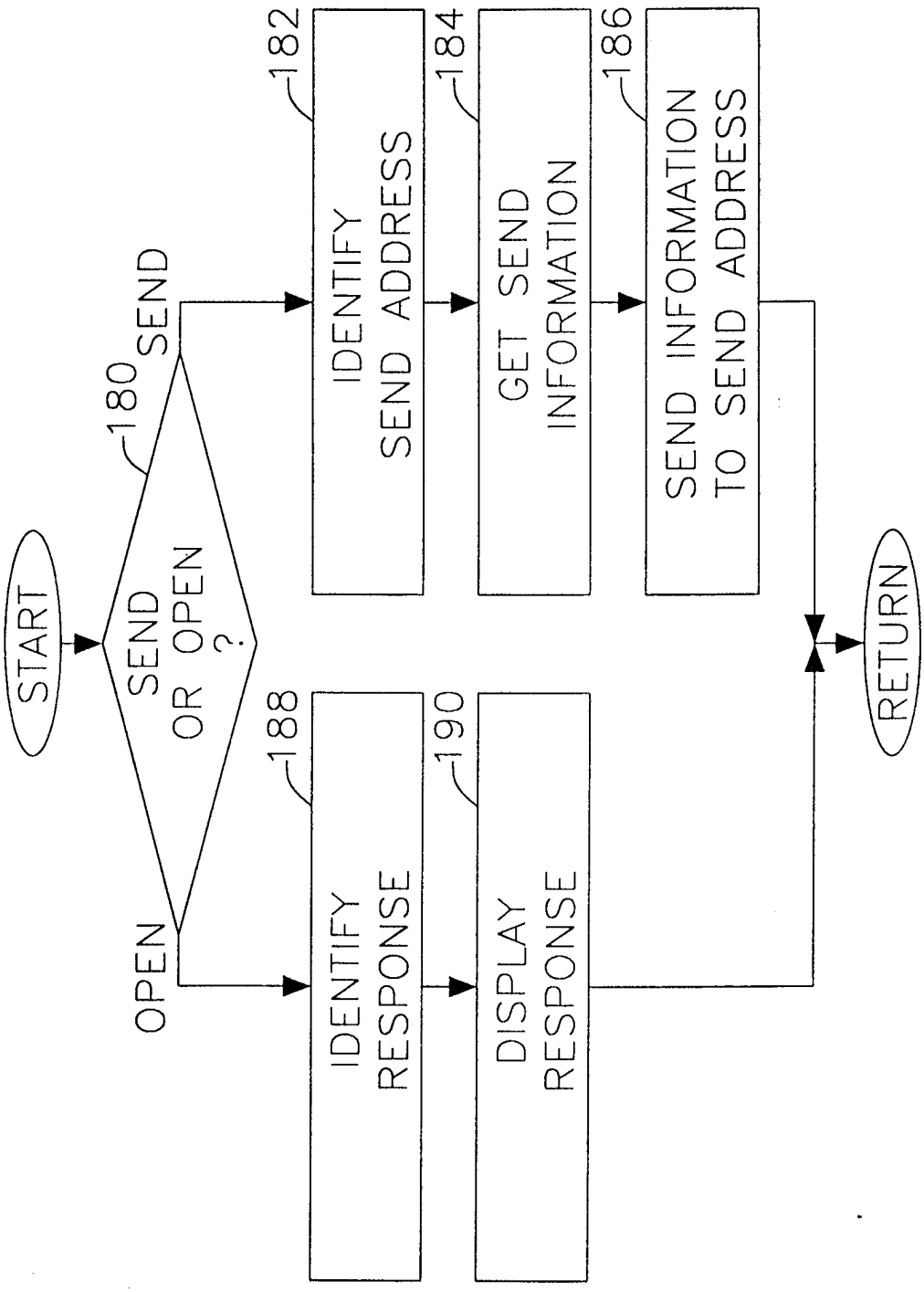

START
SEND OR OPEN ?
180
SEND
OPEN
182
IDENTIFY SEND ADDRESS
184
GET SEND INFORMATION
186
SEND INFORMATION TO SEND ADDRESS
188
IDENTIFY RESPONSE
190
DISPLAY RESPONSE
RETURN

FIG. 13

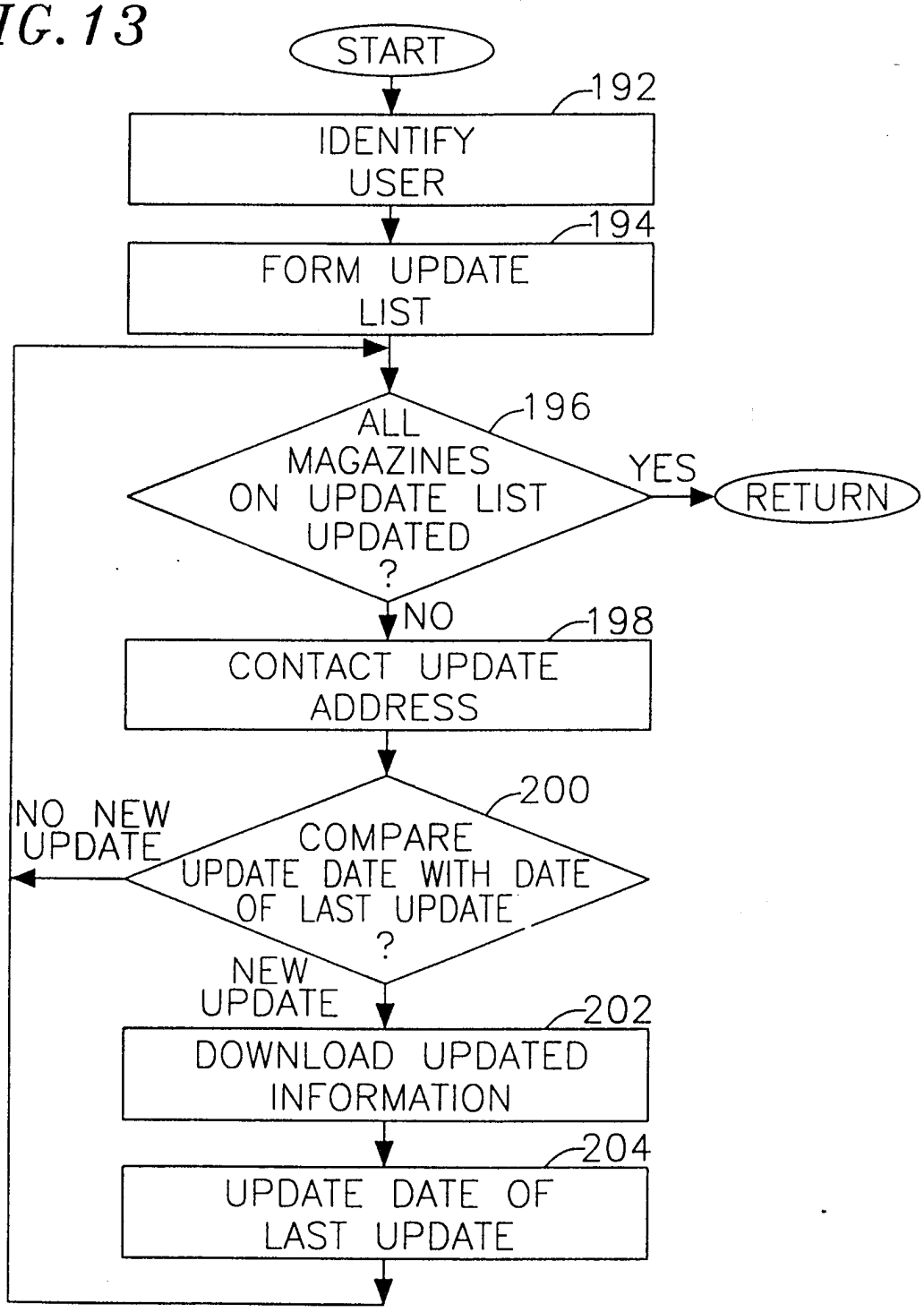

START
192
IDENTIFY USER
194
FORM UPDATE LIST
196
ALL MAGAZINES ON UPDATE LIST UPDATED ?
YES
RETURN
NO
198
CONTACT UPDATE ADDRESS
200
COMPARE UPDATE DATE WITH DATE OF LAST UPDATE ?
NO NEW UPDATE
NEW UPDATE
202
DOWNLOAD UPDATED INFORMATION
204
UPDATE DATE OF LAST UPDATE

FIG. 14

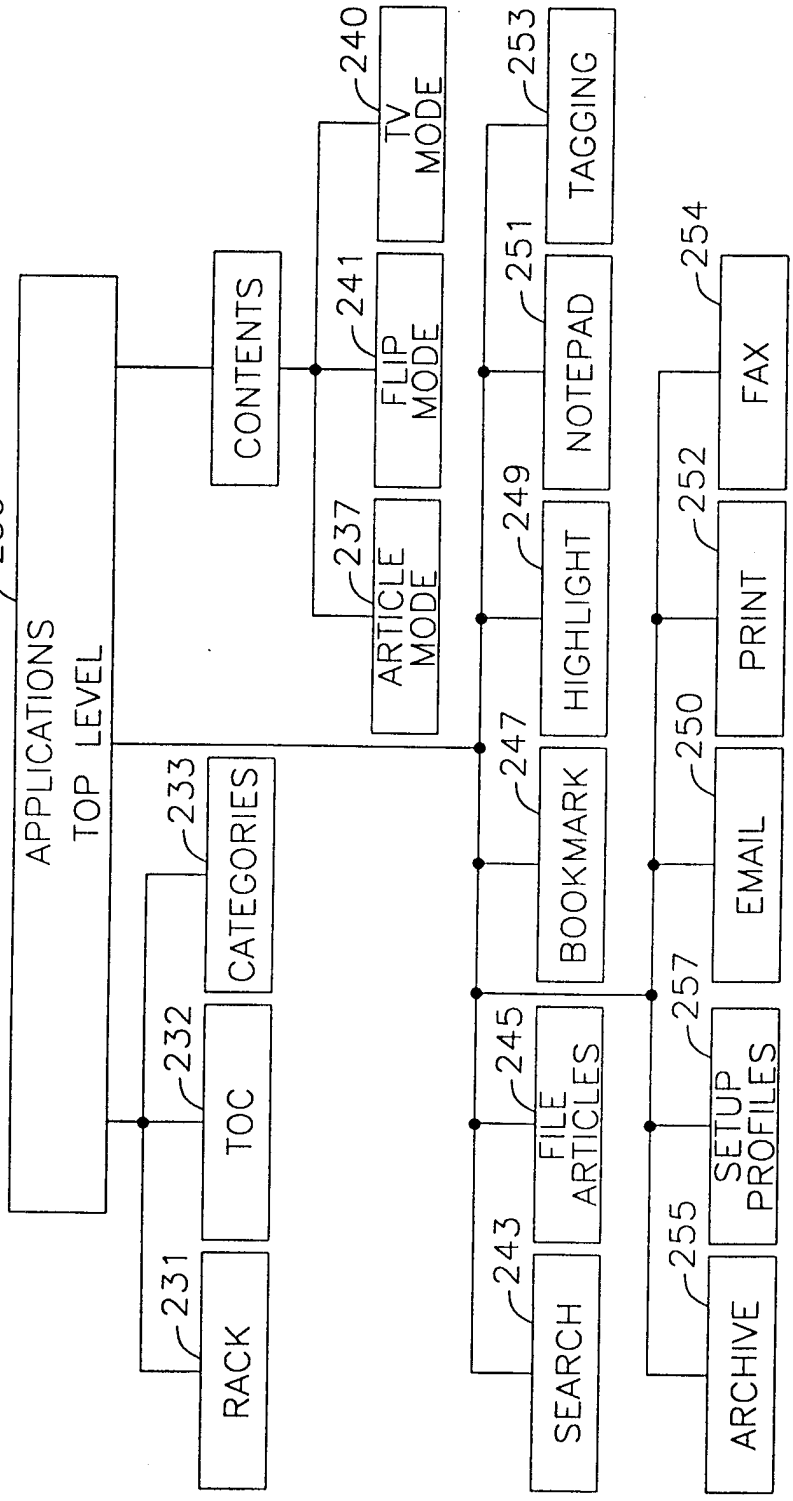

230
APPLICATIONS
TOP LEVEL
231
RACK
232
TOC
233
CATEGORIES
CONTENTS
237
ARTICLE MODE
241
FLIP MODE
240
TV MODE
243
SEARCH
245
FILE ARTICLES
247
BOOKMARK
249
HIGHLIGHT
251
NOTEPAD
253
TAGGING
255
ARCHIVE
257
SETUP PROFILES
250
EMAIL
252
PRINT
254
FAX

FIG. 15

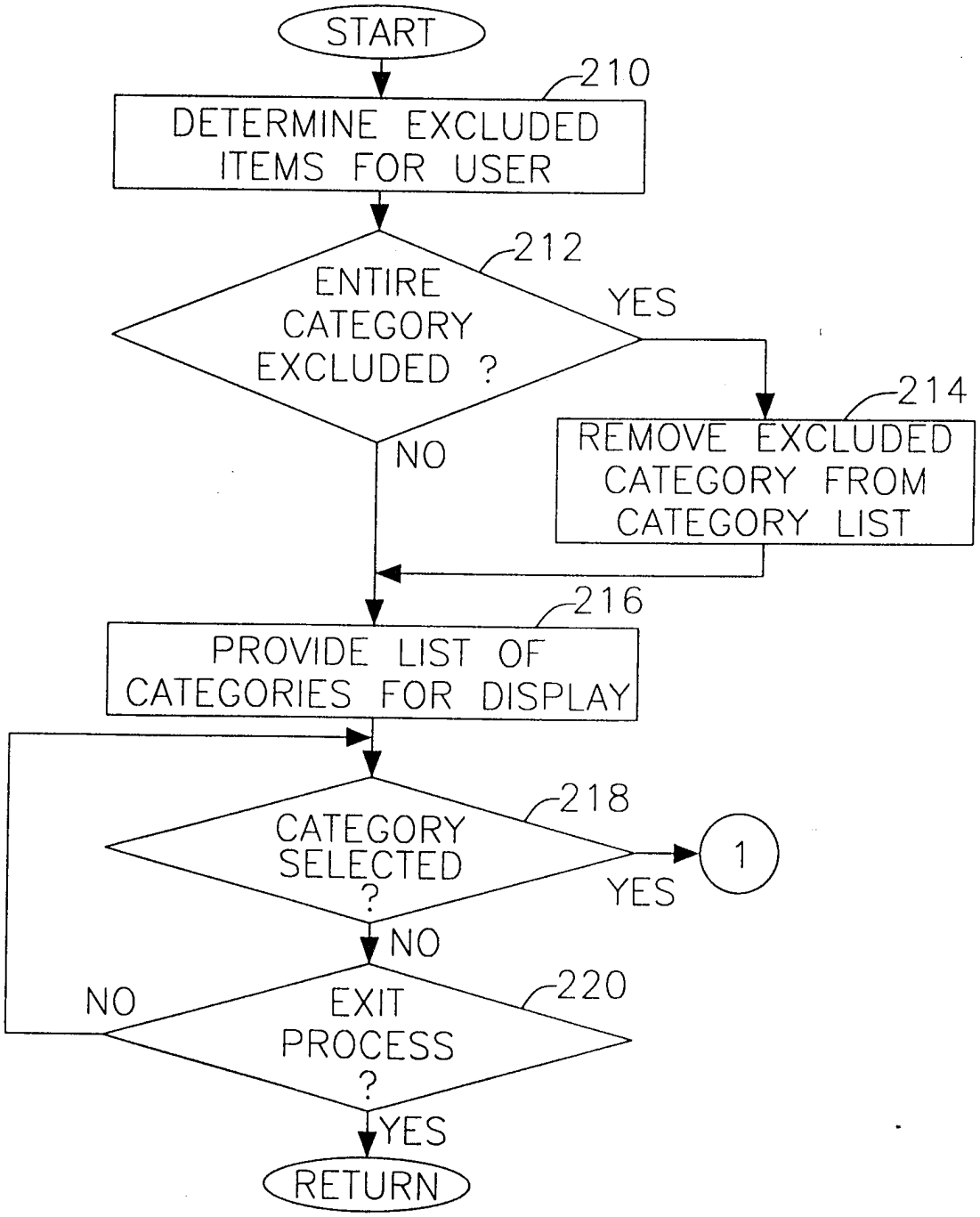

START
210
DETERMINE EXCLUDED ITEMS FOR USER
212
ENTIRE CATEGORY EXCLUDED ?
YES
NO
214
REMOVE EXCLUDED CATEGORY FROM CATEGORY LIST
216
PROVIDE LIST OF CATEGORIES FOR DISPLAY
218
CATEGORY SELECTED ?
YES
1
NO
220
EXIT PROCESS ?
NO
YES
RETURN

FIG. 16

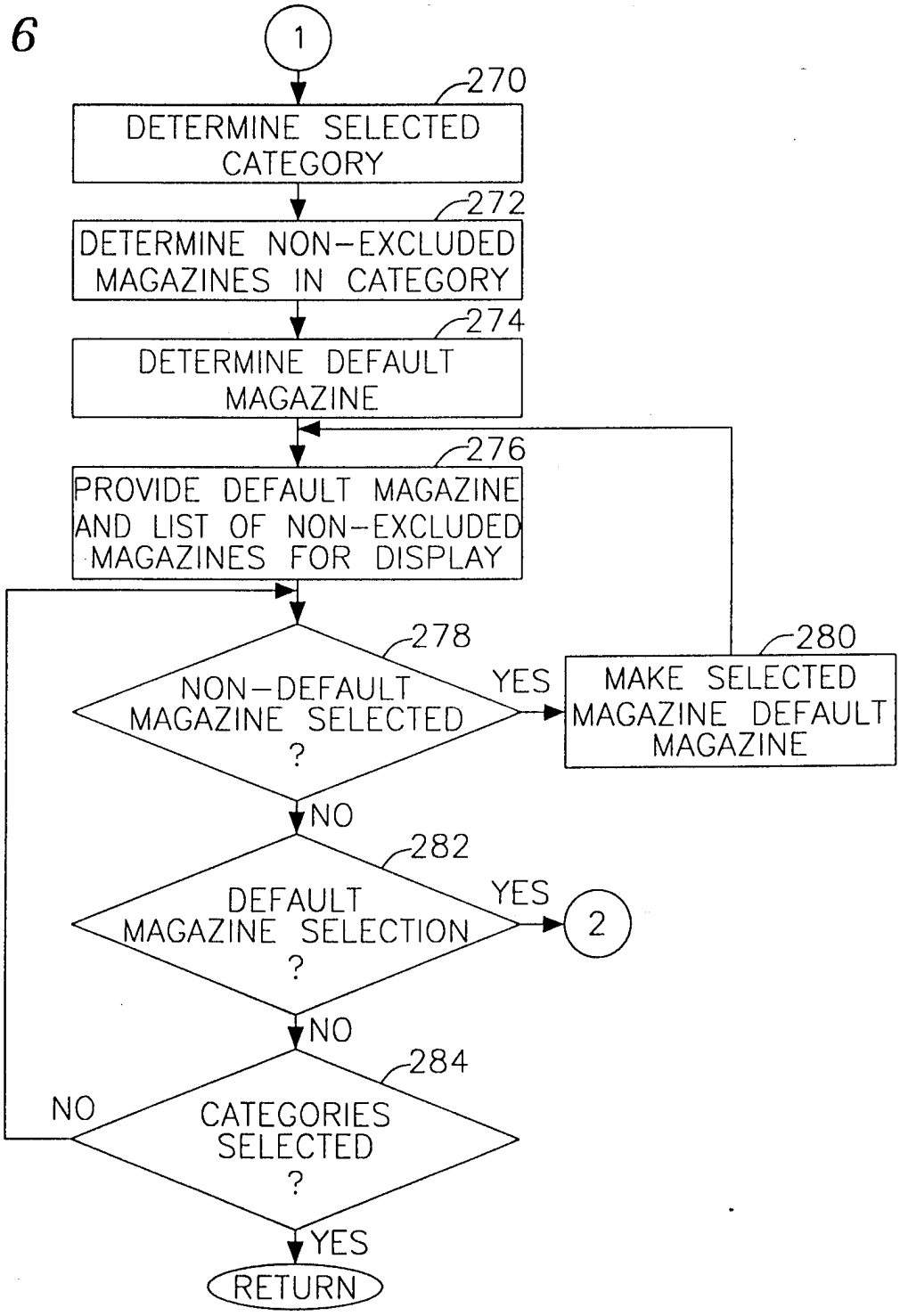

1
270
DETERMINE SELECTED CATEGORY
272
DETERMINE NON-EXCLUDED MAGAZINES IN CATEGORY
274
DETERMINE DEFAULT MAGAZINE
276
PROVIDE DEFAULT MAGAZINE AND LIST OF NON-EXCLUDED MAGAZINES FOR DISPLAY
278
NON-DEFAULT MAGAZINE SELECTED ?
YES
280
MAKE SELECTED MAGAZINE DEFAULT MAGAZINE
NO
282
DEFAULT MAGAZINE SELECTION ?
YES
2
NO
284
CATEGORIES SELECTED ?
NO
YES
RETURN

FIG. 17

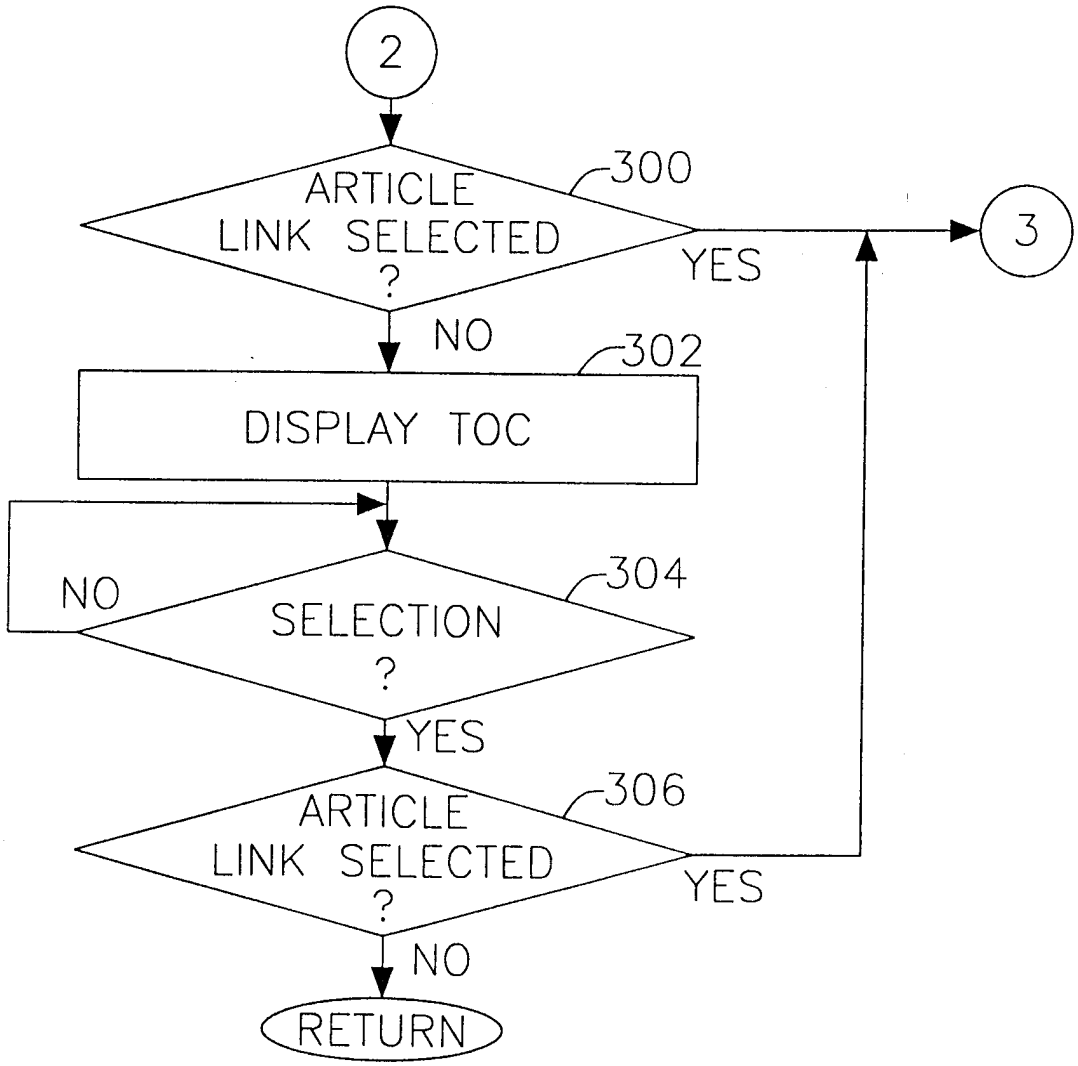

2
ARTICLE LINK SELECTED ?
300
YES
3
NO
302
DISPLAY TOC
NO
SELECTION ?
304
YES
ARTICLE LINK SELECTED ?
306
YES
NO
RETURN

FIG. 18

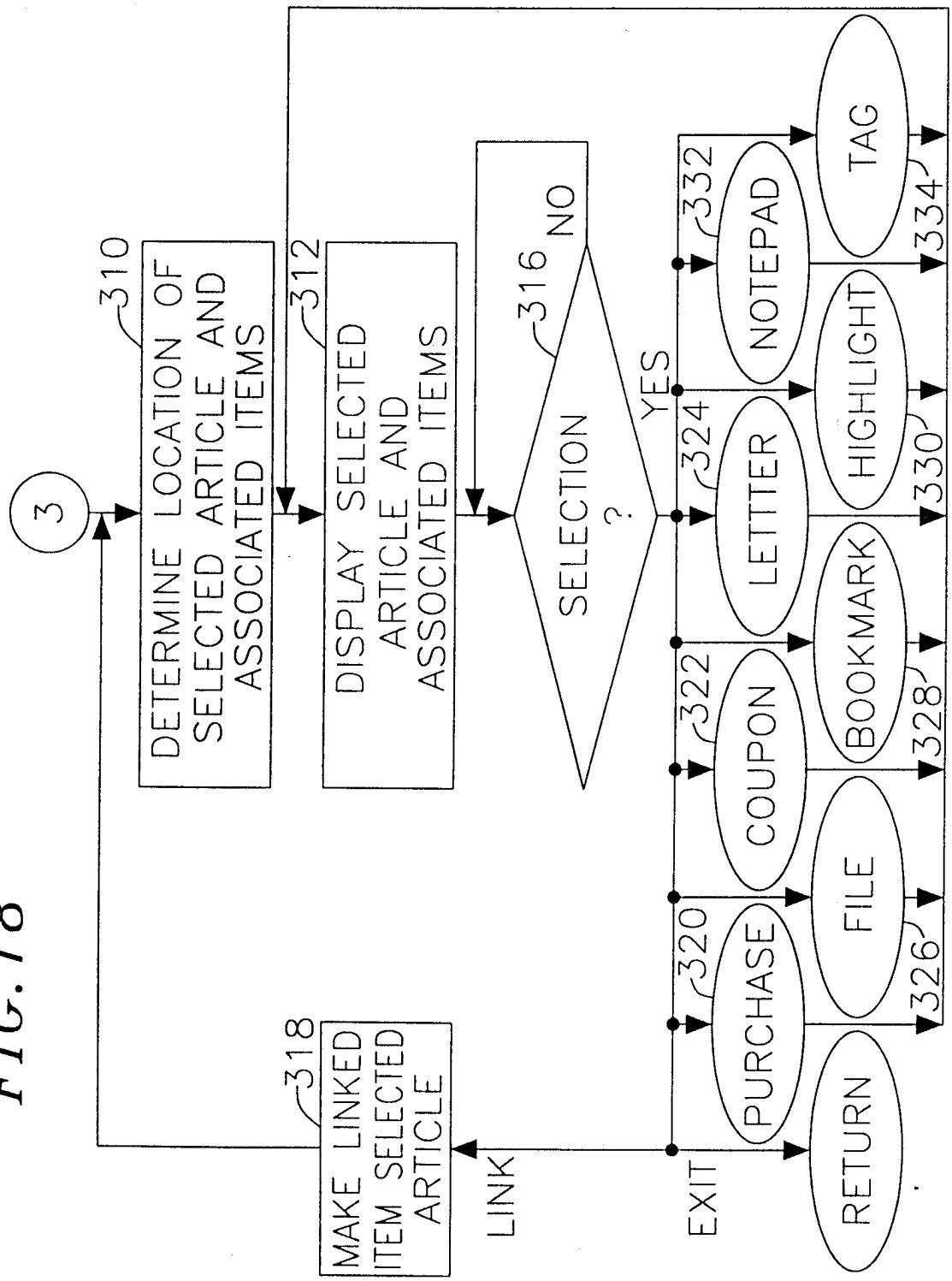

3
310
DETERMINE LOCATION OF SELECTED ARTICLE AND ASSOCIATED ITEMS
312
DISPLAY SELECTED ARTICLE AND ASSOCIATED ITEMS
316
SELECTION ?
NO
YES
318
MAKE LINKED ITEM SELECTED ARTICLE
LINK
EXIT
320
PURCHASE
322
COUPON
324
LETTTER
326
FILE
328
BOOKMARK
330
HIGHLIGHT
332
NOTEPAD
334
TAG
RETURN

FIG. 19

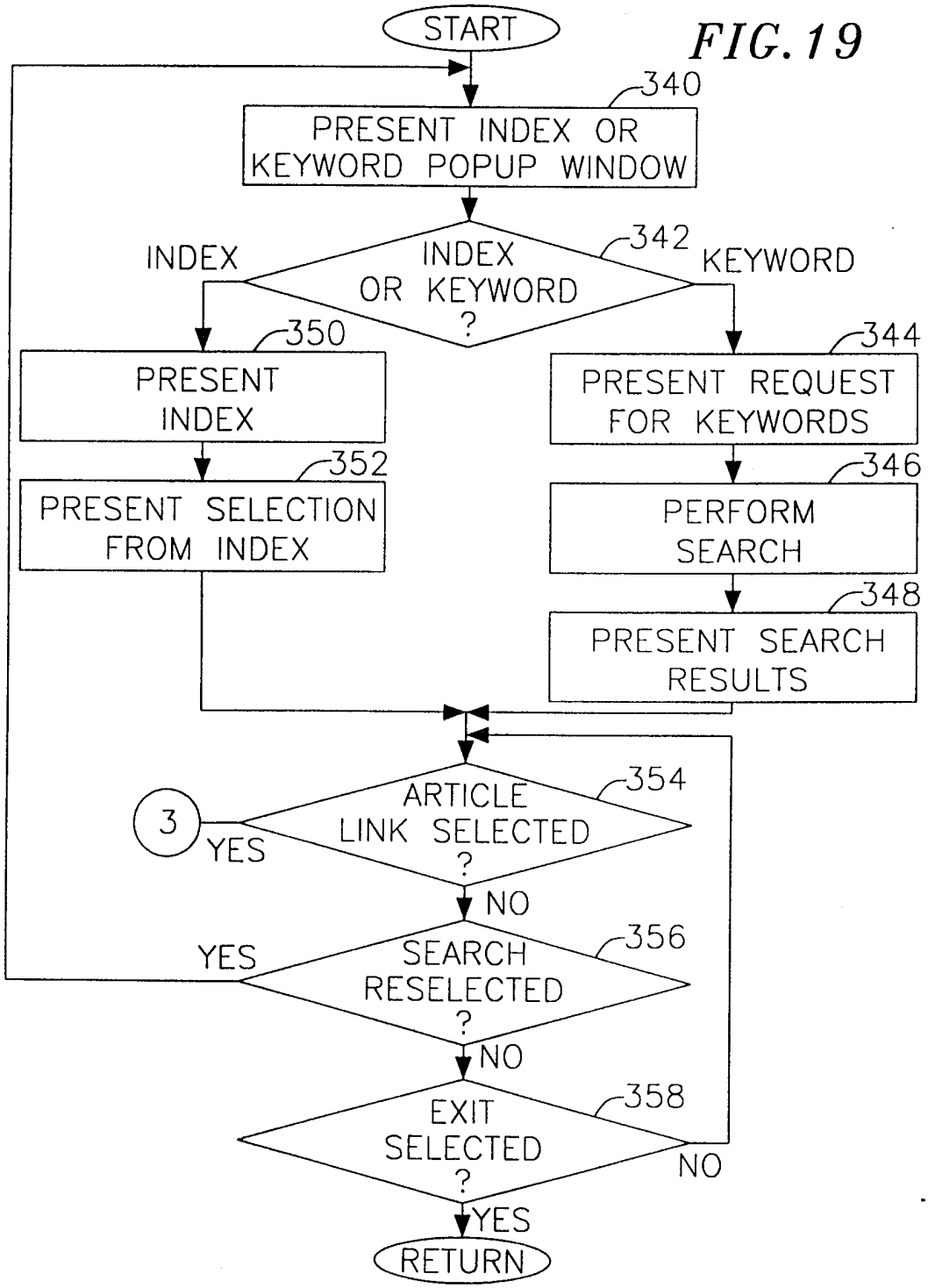

START
340
PRESENT INDEX OR KEYWORD POPUP WINDOW
342
INDEX OR KEYWORD ?
INDEX
KEYWORD
350
PRESENT INDEX
352
PRESENT SELECTION FROM INDEX
344
PRESENT REQUEST FOR KEYWORDS
346
PERFORM SEARCH
348
PRESENT SEARCH RESULTS
3
354
ARTICLE LINK SELECTED ?
YES
NO
356
SEARCH RESELECTED ?
YES
NO
358
EXIT SELECTED ?
NO
YES
RETURN

FIG.20

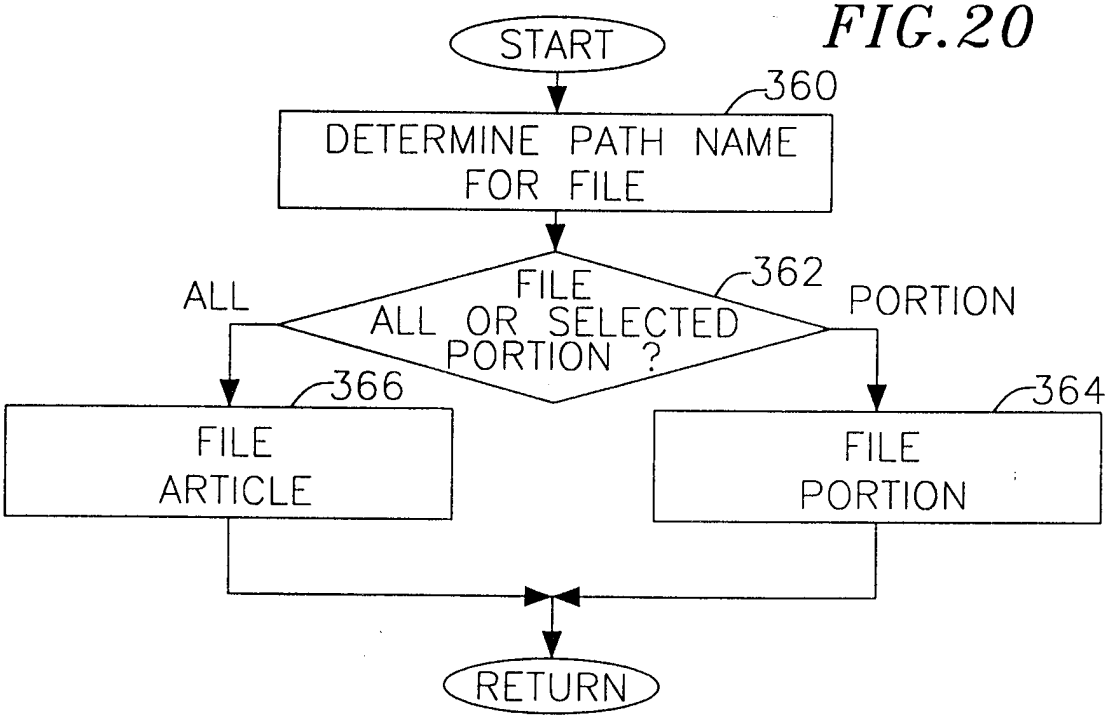

START
360
DETERMINE PATH NAME FOR FILE
362
FILE ALL OR SELECTED PORTION ?
ALL
PORTION
366
FILE ARTICLE
364
FILE PORTION
RETURN

FIG.21

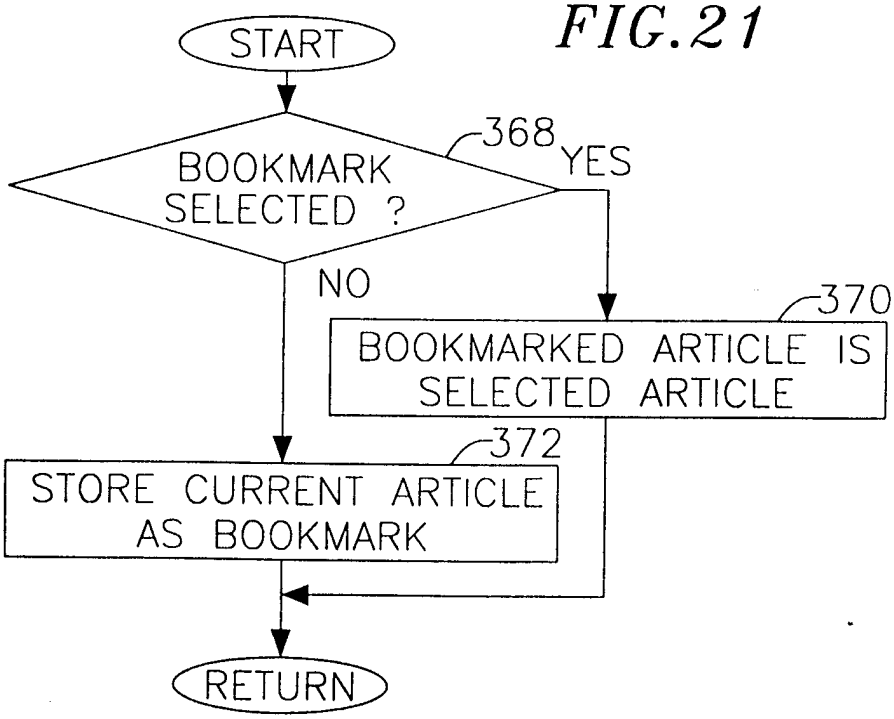

START
368
BOOKMARK SELECTED ?
YES
NO
370
BOOKMARKED ARTICLE IS SELECTED ARTICLE
372
STORE CURRENT ARTICLE AS BOOKMARK
RETURN

FIG.22

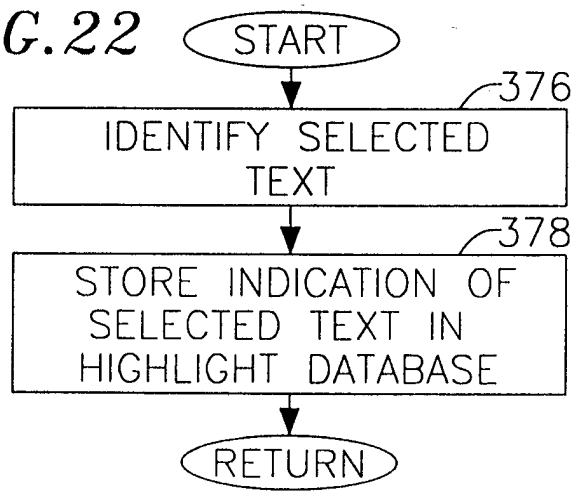


FIG.23

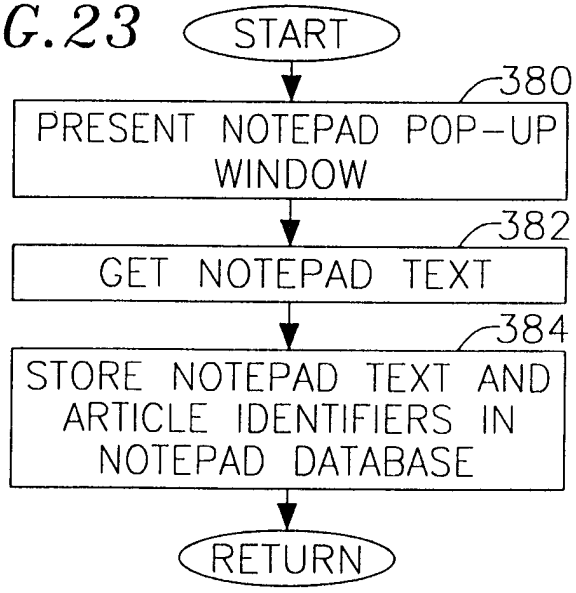


FIG.24

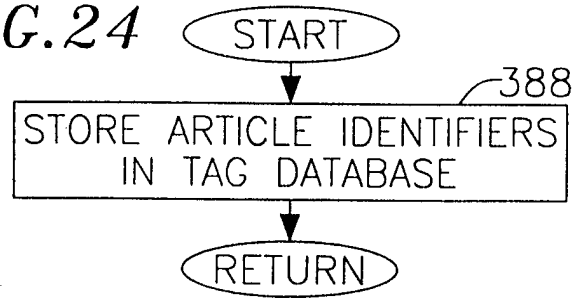


FIG.25

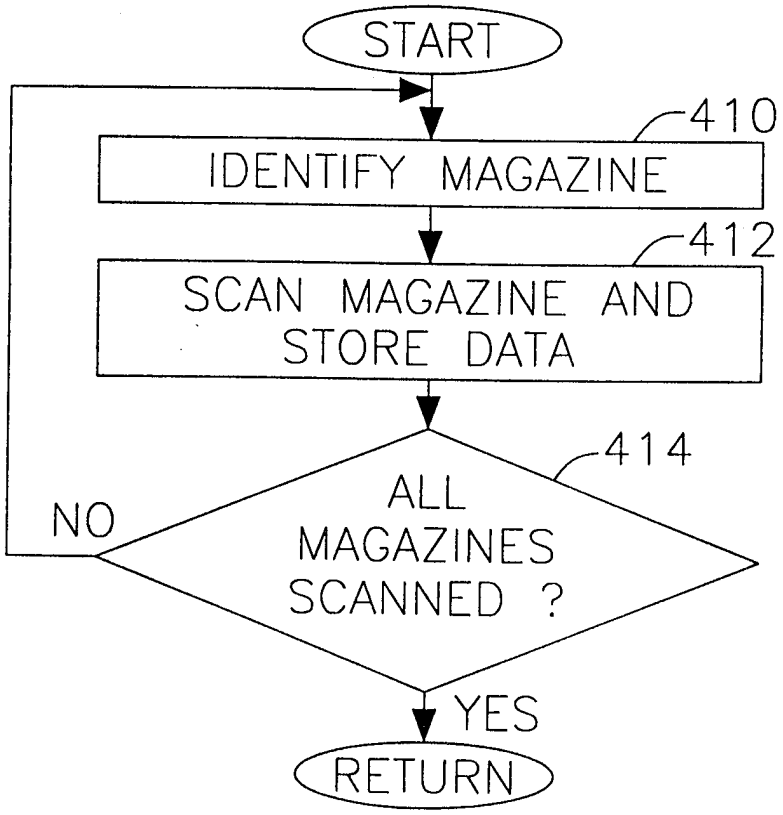

START
410
IDENTIFY MAGAZINE
412
SCAN MAGAZINE AND STORE DATA
414
ALL MAGAZINES SCANNED ?
NO
YES
RETURN

FIG.26

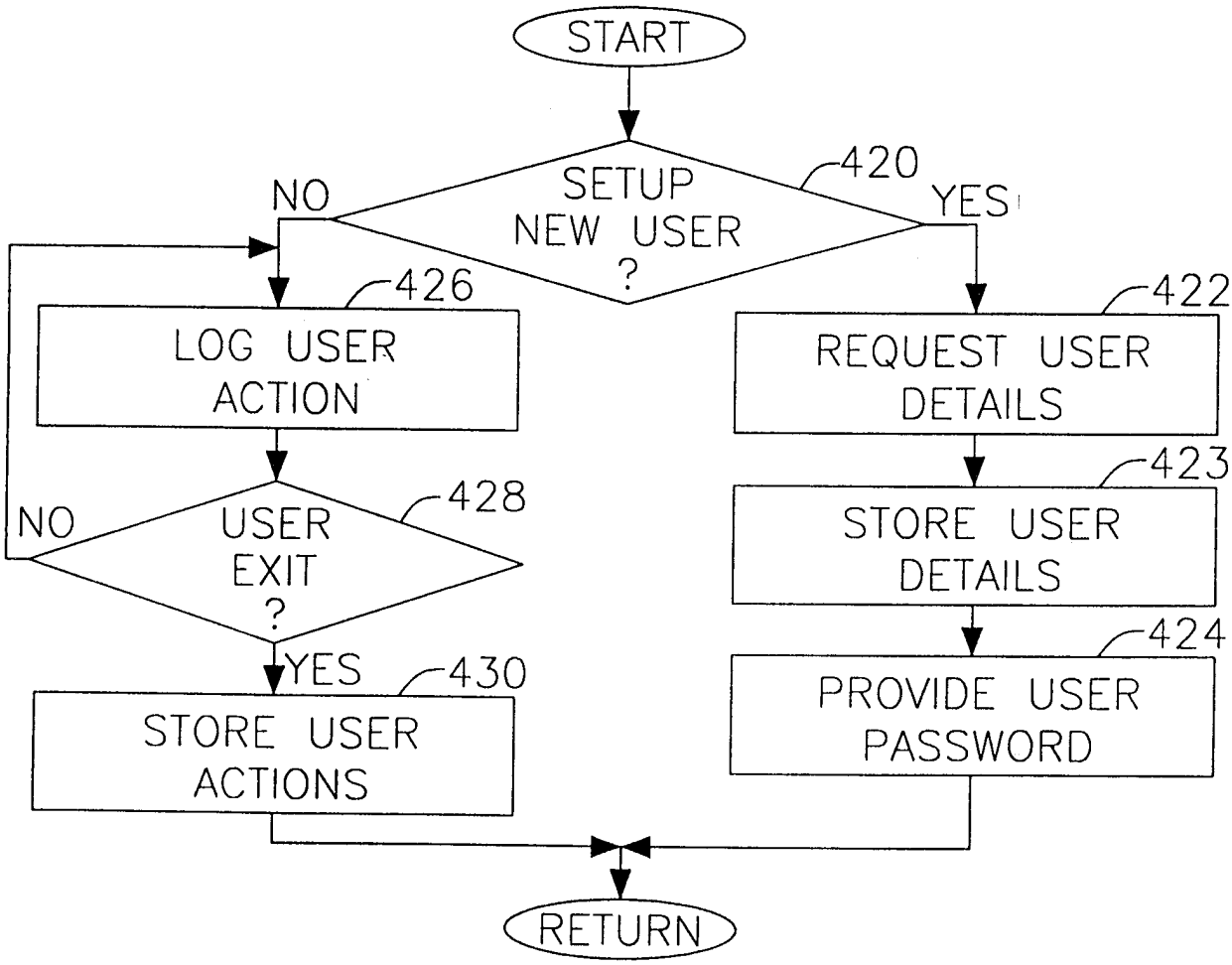

START
SETUP NEW USER ?
420
NO
YES
426
LOG USER ACTION
422
REQUEST USER DETAILS
423
STORE USER DETAILS
424
PROVIDE USER PASSWORD
428
NO
USER EXIT ?
YES
430
STORE USER ACTIONS
RETURN

FIG. 27

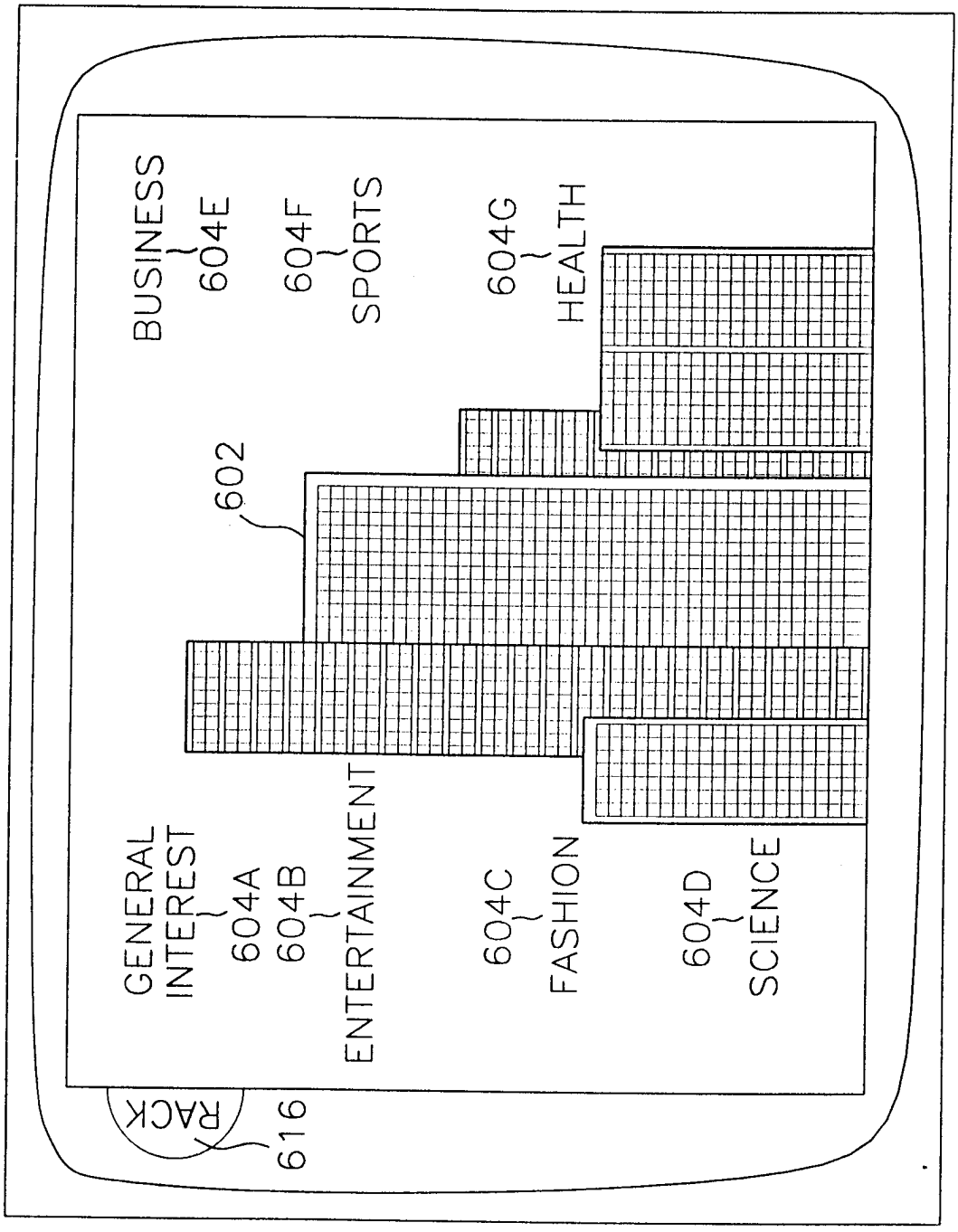

GENERAL INTEREST
604A
604B
ENTERTAINMENT
604C
FASHION
604D
SCIENCE
BUSINESS
604E
604F
SPORTS
604G
HEALTH
602
RACK
616

FIG.28

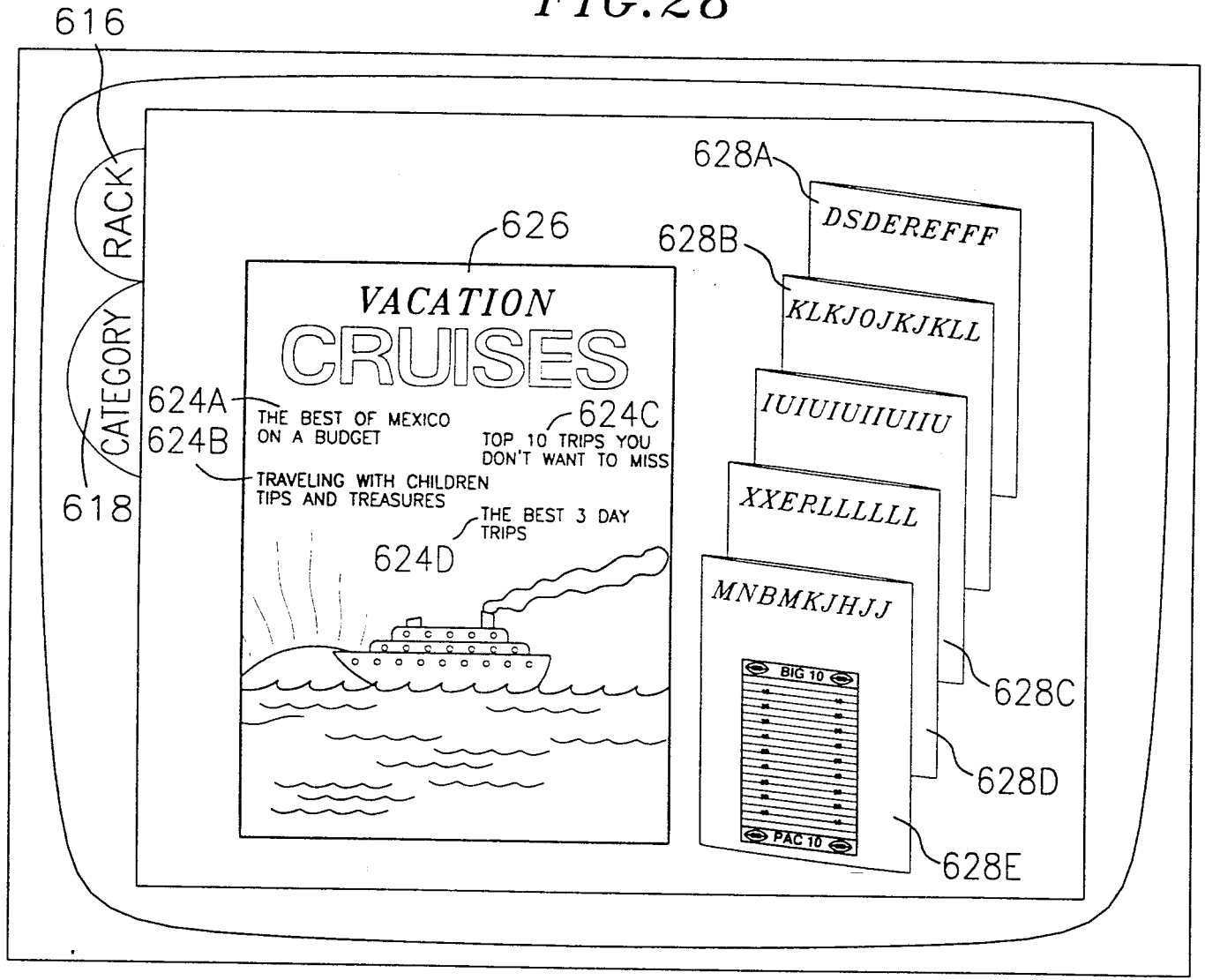

616
RACK
CATEGORY
618
626
VACATION
CRUISES
624A
THE BEST OF MEXICO
ON A BUDGET
624B
TRAVELING WITH CHILDREN
TIPS AND TREASURES
624C
TOP 10 TRIPS YOU
DON'T WANT TO MISS
624D
THE BEST 3 DAY
TRIPS
628A
DSDEREFFF
628B
KLKJOJKJKLL
IUIUIUIIUIIU
XXERLLLLLL
MNBMKJHJJ
BIG 10
PAC 10
628C
628D
628E

FIG.29

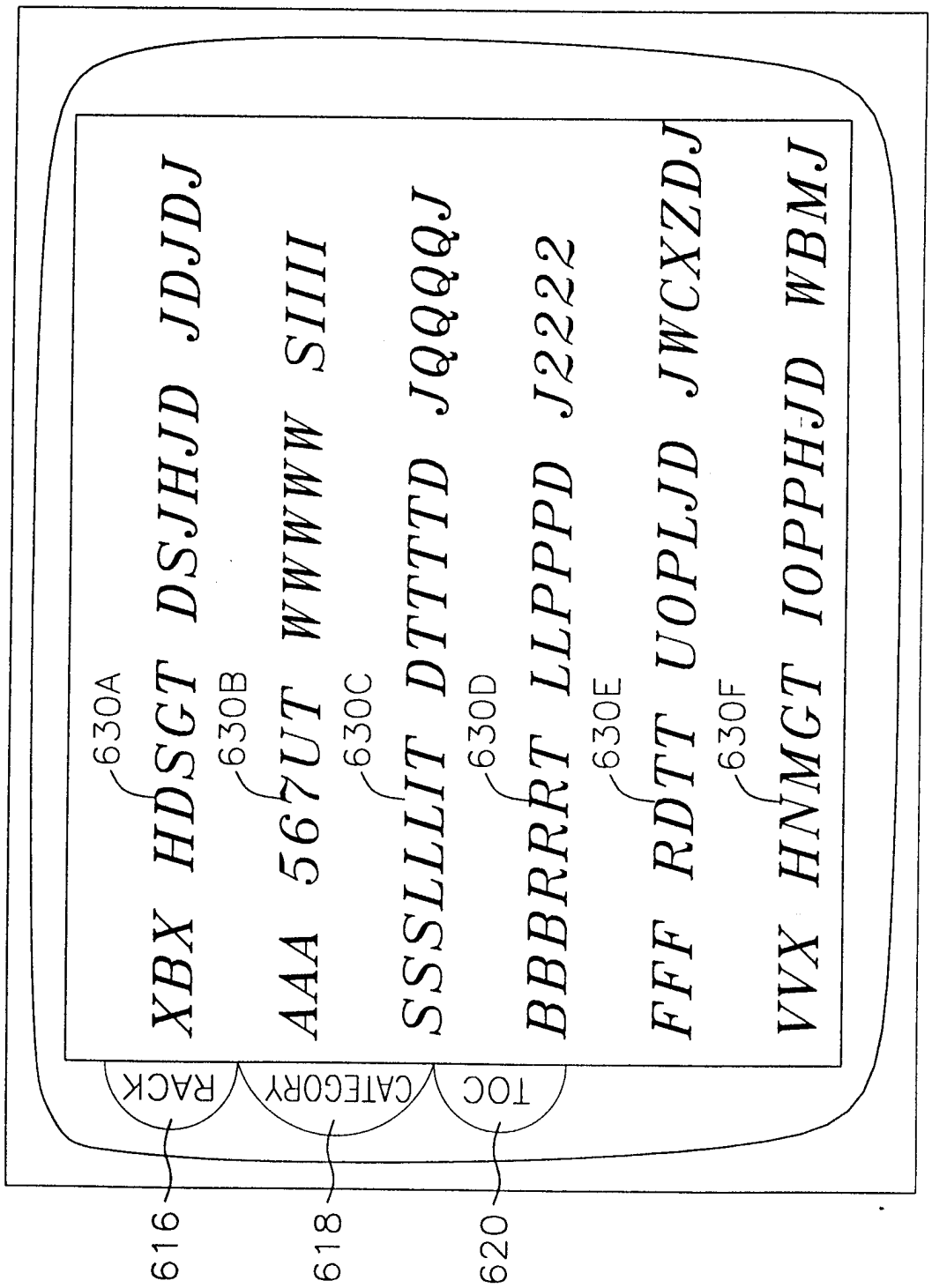

630A
630B
630C
630D
630E
630F
XBX HDSGT DSJHJD JDJDJ
AAA 567UT WWWW SIIII
SSSLLLIT DTTTD JQQQQJ
BBBRRRT LLPPPD J2222
FFF RDTT UOPLJD JWCXZDJ
VVX HNMGT IOPPHJD WBMJ
RACK
CATEGORY
TOC
616
618
620

FIG. 30

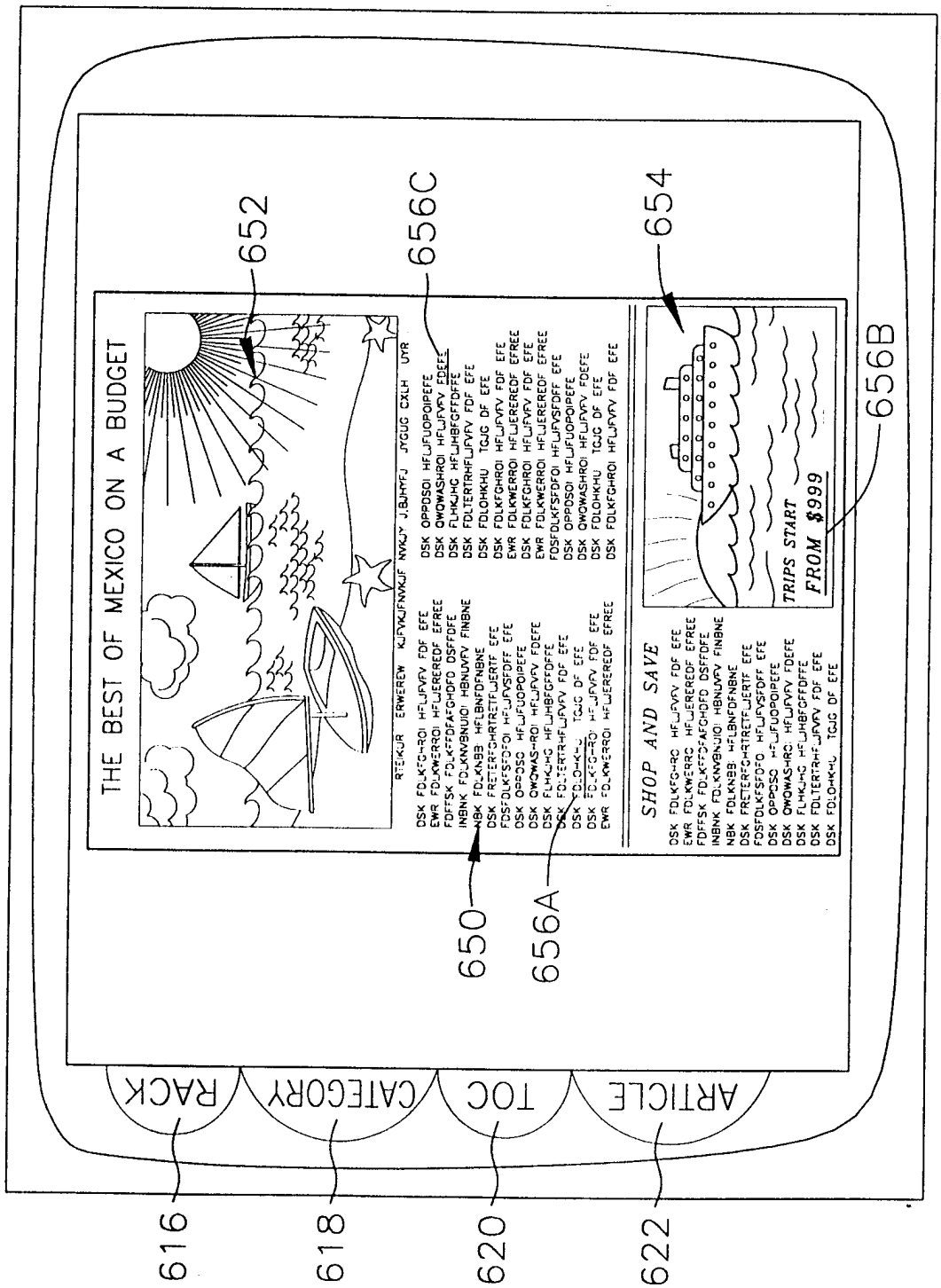

RACK
CATEGORY
TOC
ARTICLE
616
618
620
622
THE BEST OF MEXICO ON A BUDGET
652
656C
654
650
656A
656B
SHOP AND SAVE
TRIPS START
FROM $999

FIG.31

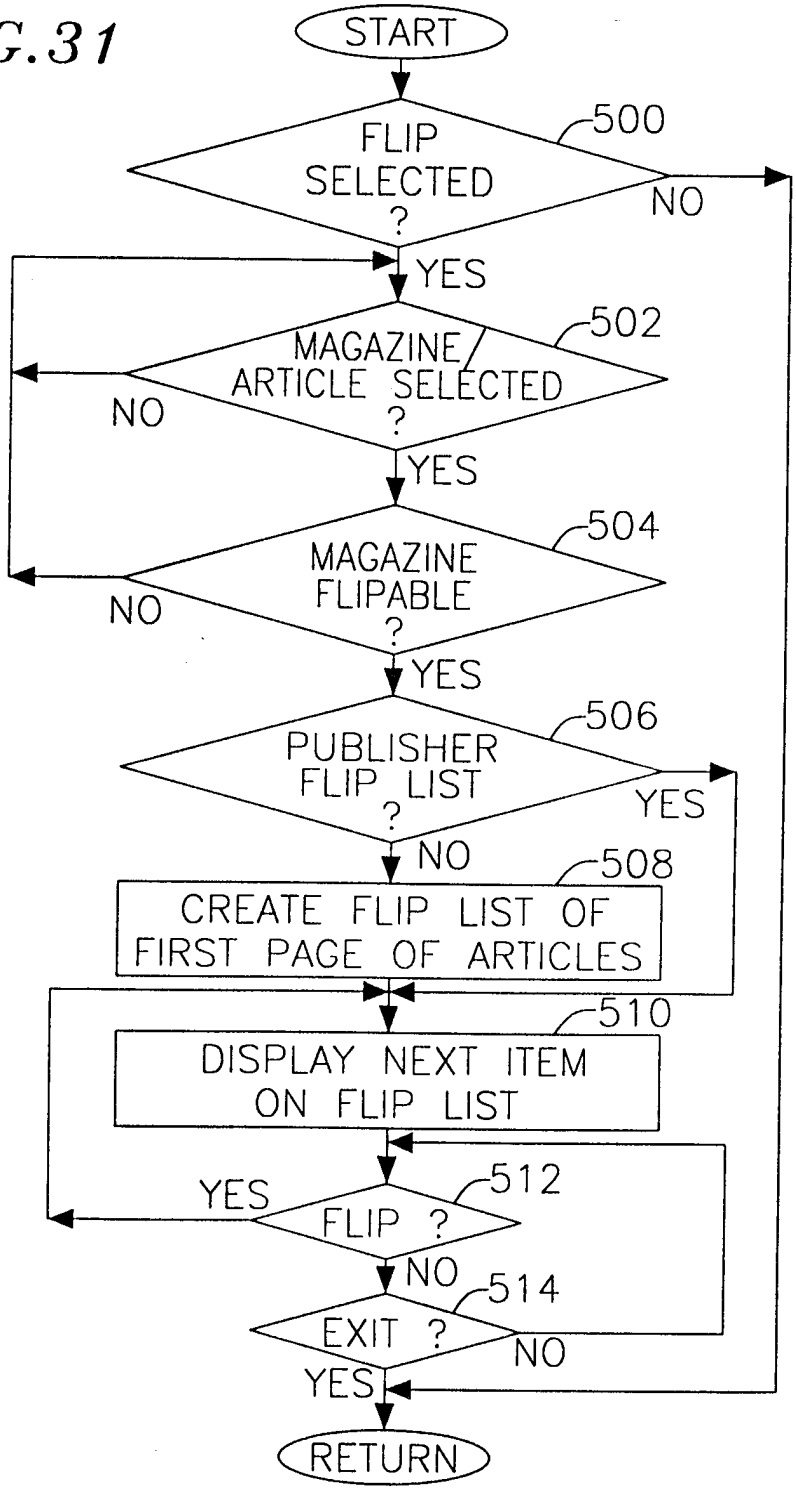
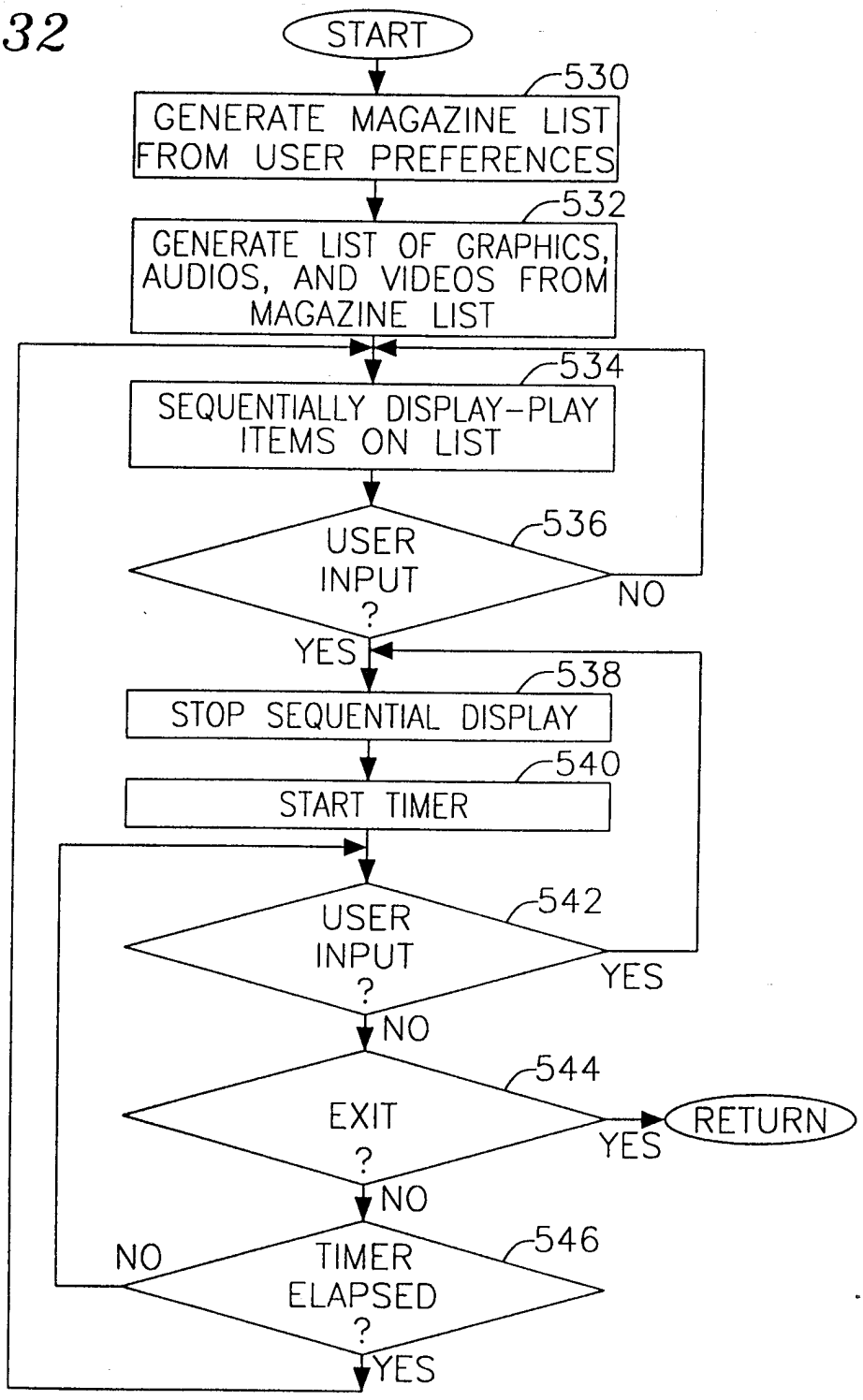

START
FLIP SELECTED ?
500
NO
YES
MAGAZINE/ ARTICLE SELECTED ?
502
NO
YES
MAGAZINE FLIPABLE ?
504
NO
YES
PUBLISHER FLIP LIST ?
506
YES
NO
CREATE FLIP LIST OF FIRST PAGE OF ARTICLES
508
DISPLAY NEXT ITEM ON FLIP LIST
510
YES
FLIP ?
512
NO
EXIT ?
514
NO
YES
RETURN

FIG.32


START
530
GENERATE MAGAZINE LIST FROM USER PREFERENCES
532
GENERATE LIST OF GRAPHICS, AUDIOS, AND VIDEOS FROM MAGAZINE LIST
534
SEQUENTIALLY DISPLAY-PLAY ITEMS ON LIST
536
USER INPUT ?
NO
YES
538
STOP SEQUENTIAL DISPLAY
540
START TIMER
542
USER INPUT ?
YES
NO
544
EXIT ?
RETURN
YES
NO
546
NO
TIMER ELAPSED ?
YES