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Patterson

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(54) **DELIVERING ELECTRONIC CONTENT**

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G06F 15/16 (2006.01)

(52) **U.S. Cl.** **709/229; 709/206**

(58) **Field of Classification Search** **709/231, 709/232, 233, 235, 238, 202, 203, 207, 206, 709/229**

See application file for complete search history.

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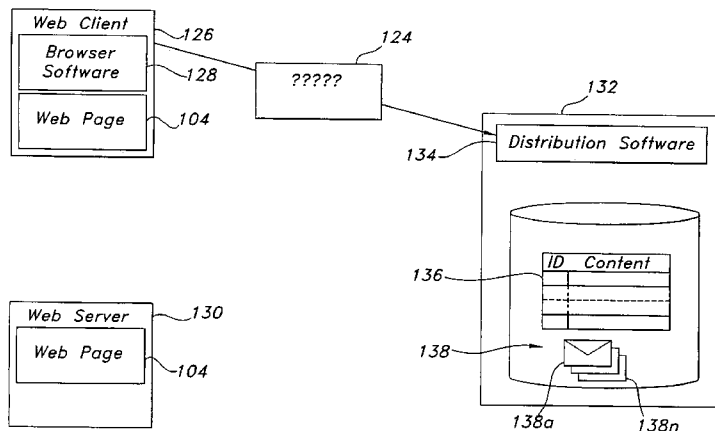
(Continued)

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(57) **ABSTRACT**

Delivering electronic content includes providing instructions that cause a computer to collect information including an e-mail address and transmitting the collected information to a receiving computer. The computer that receives the transmitted information selects electronic content based on the received information and sends the selected electronic content to the e-mail address included in the received information.

22 Claims, 14 Drawing Sheets



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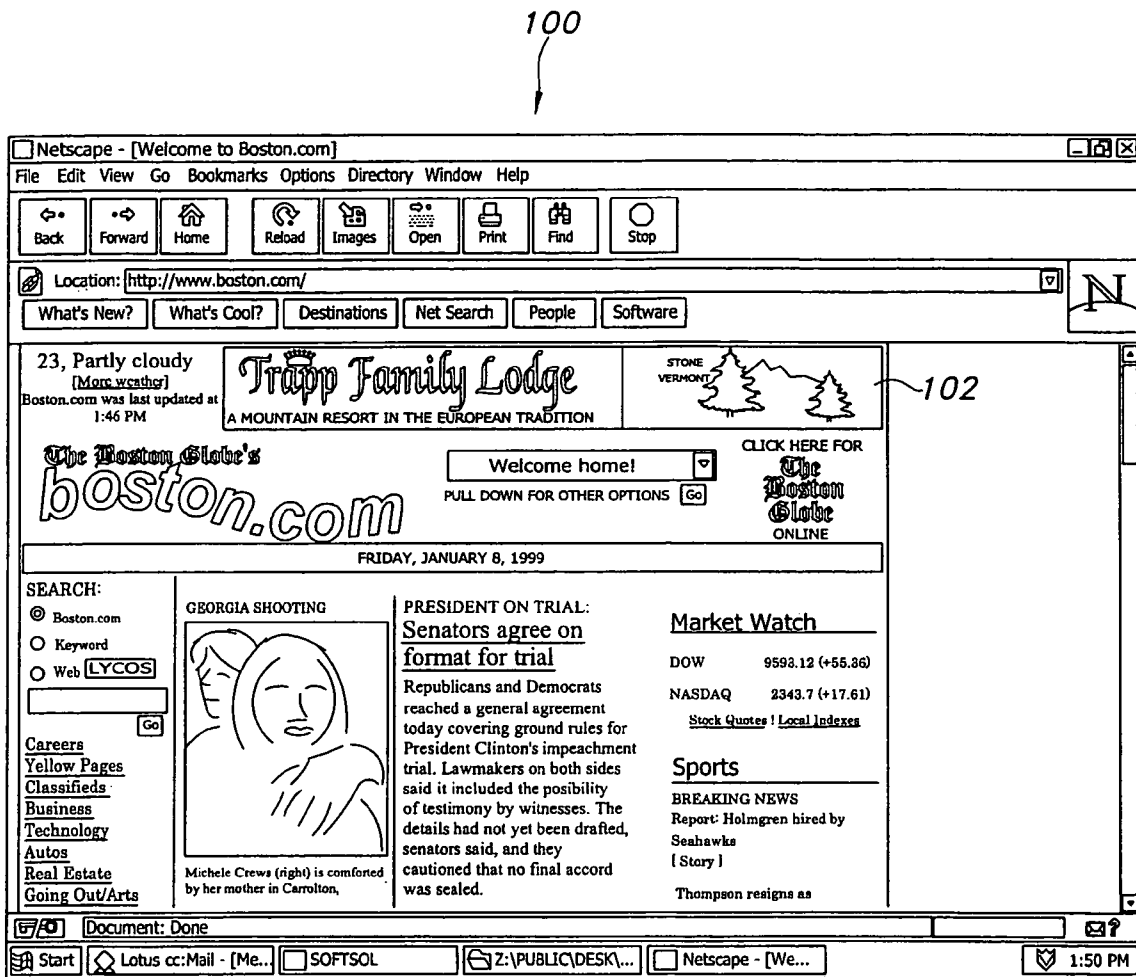


FIG 1

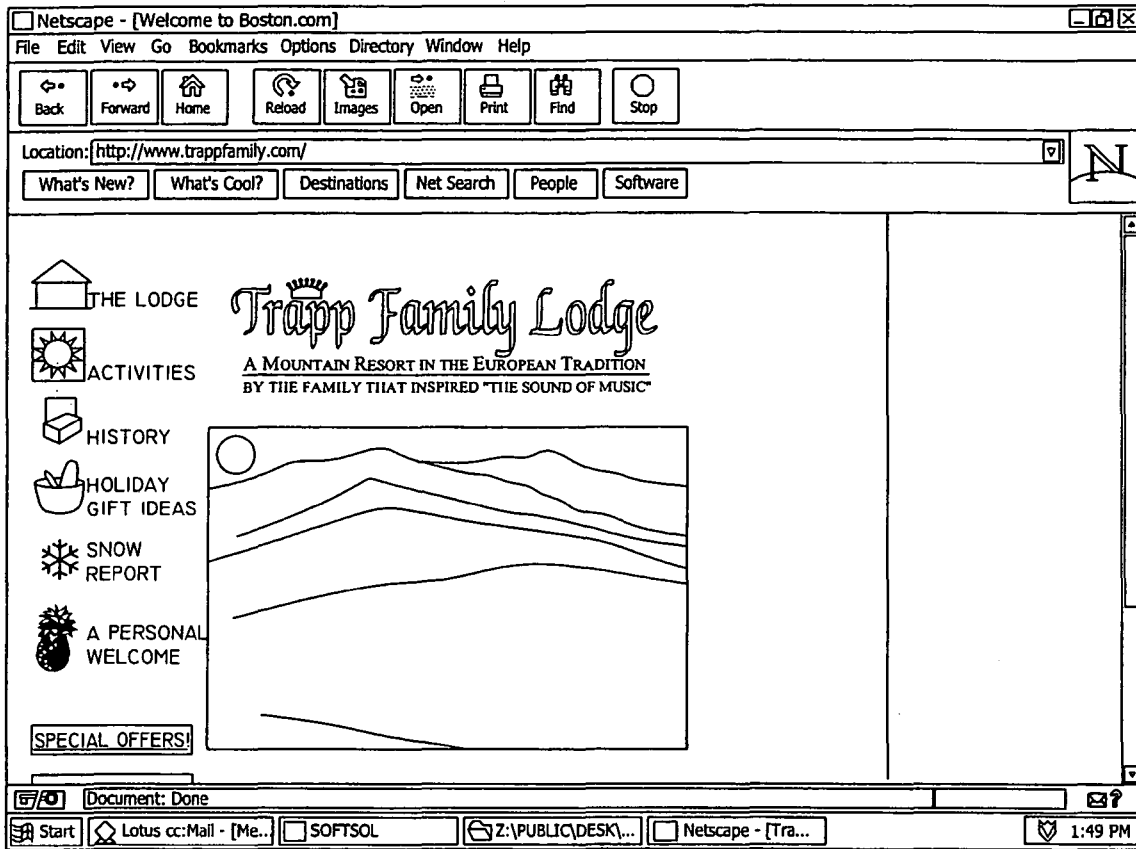


FIG 2

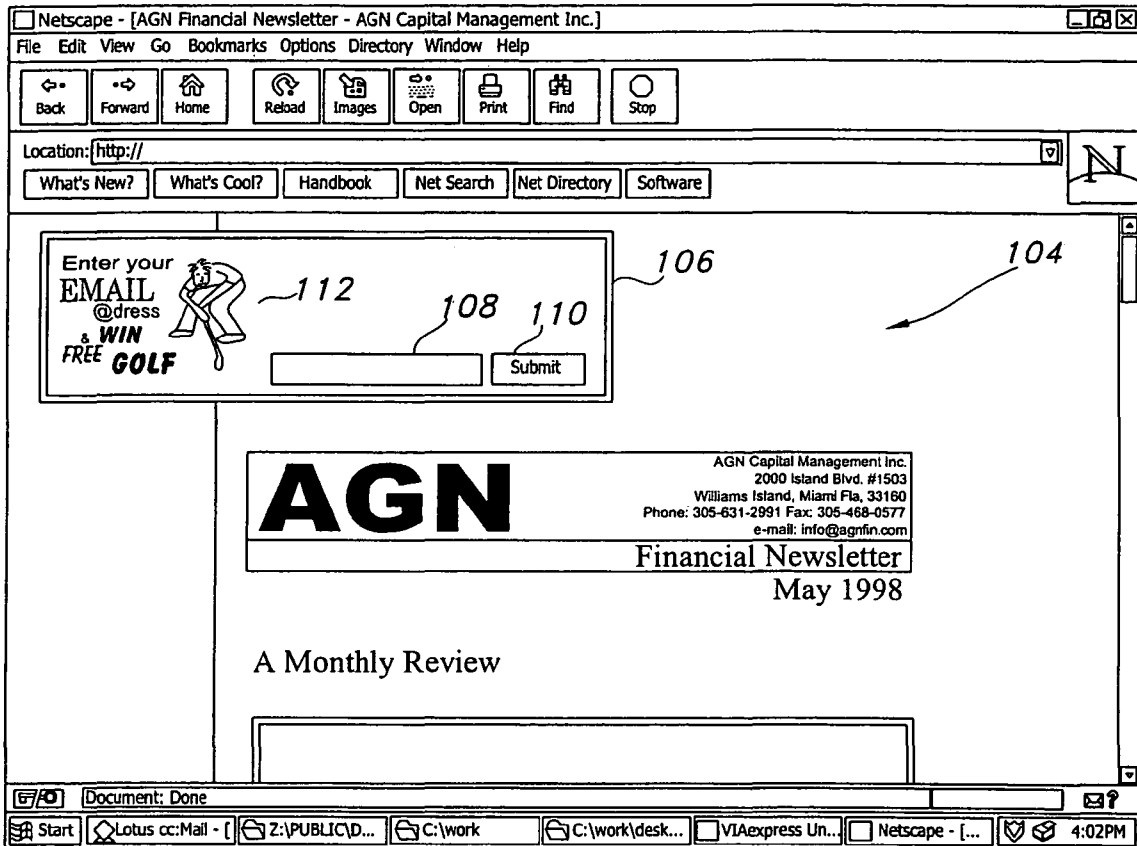


FIG 3

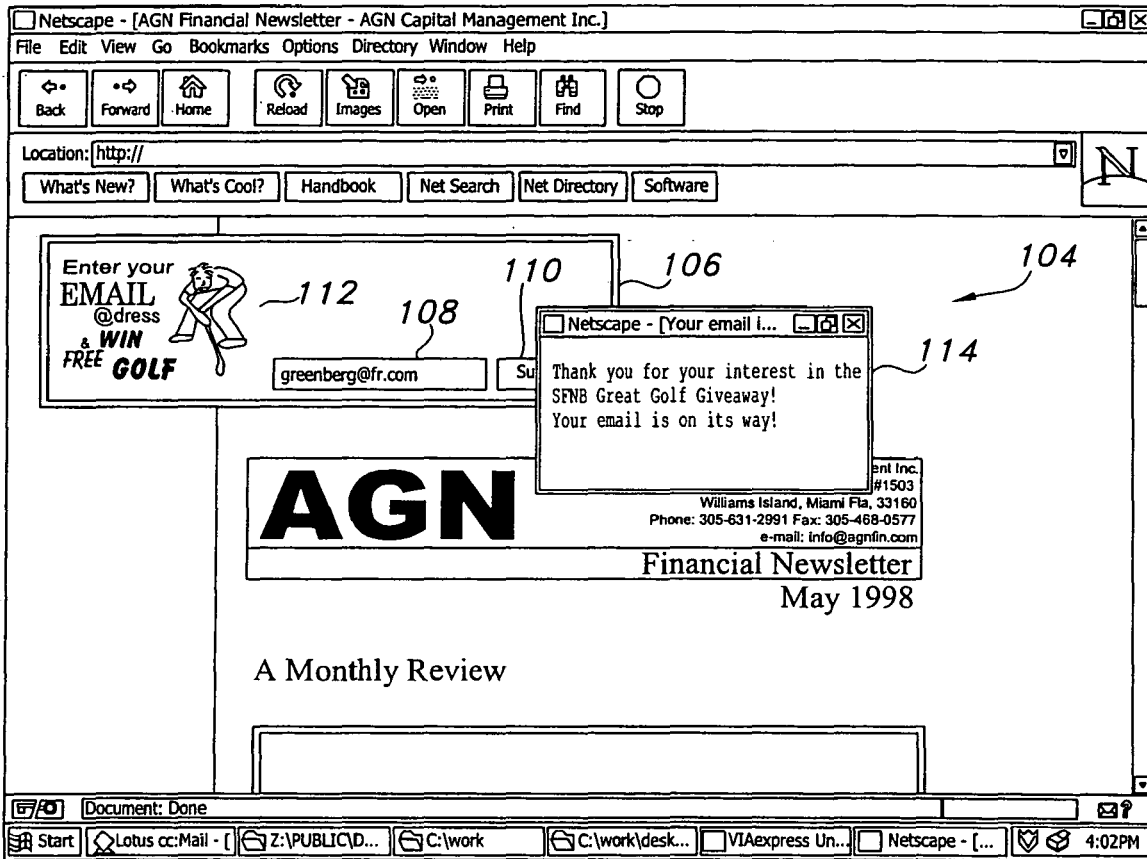
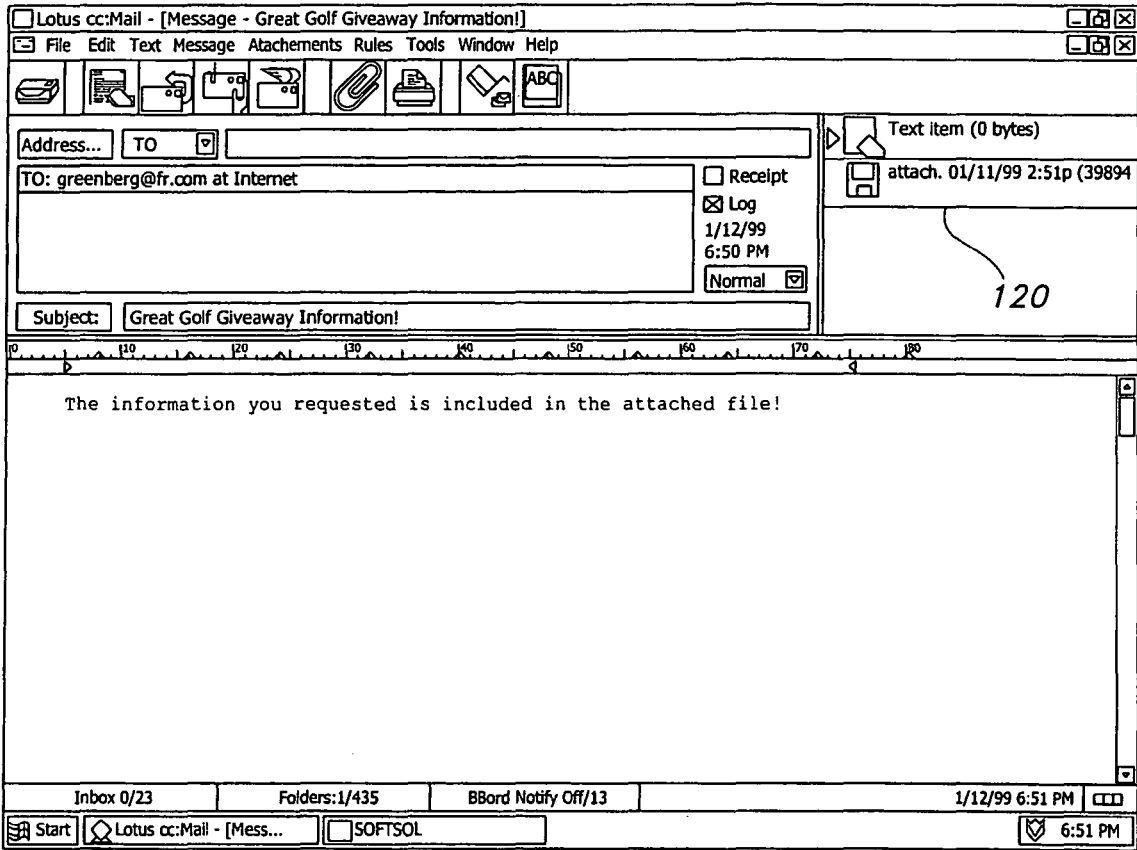


FIG 4

116
↓



120

FIG 5

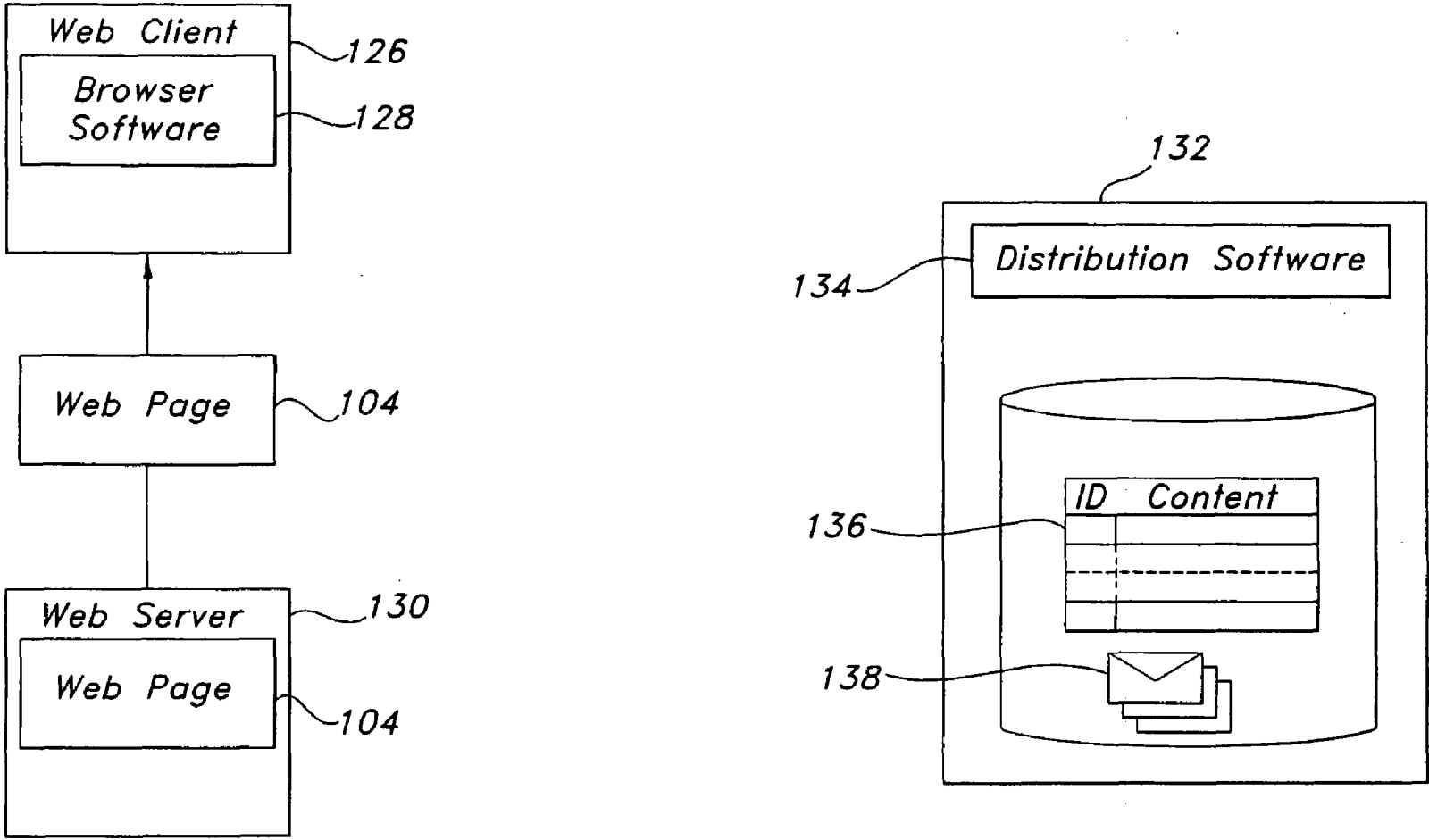


FIG 7A

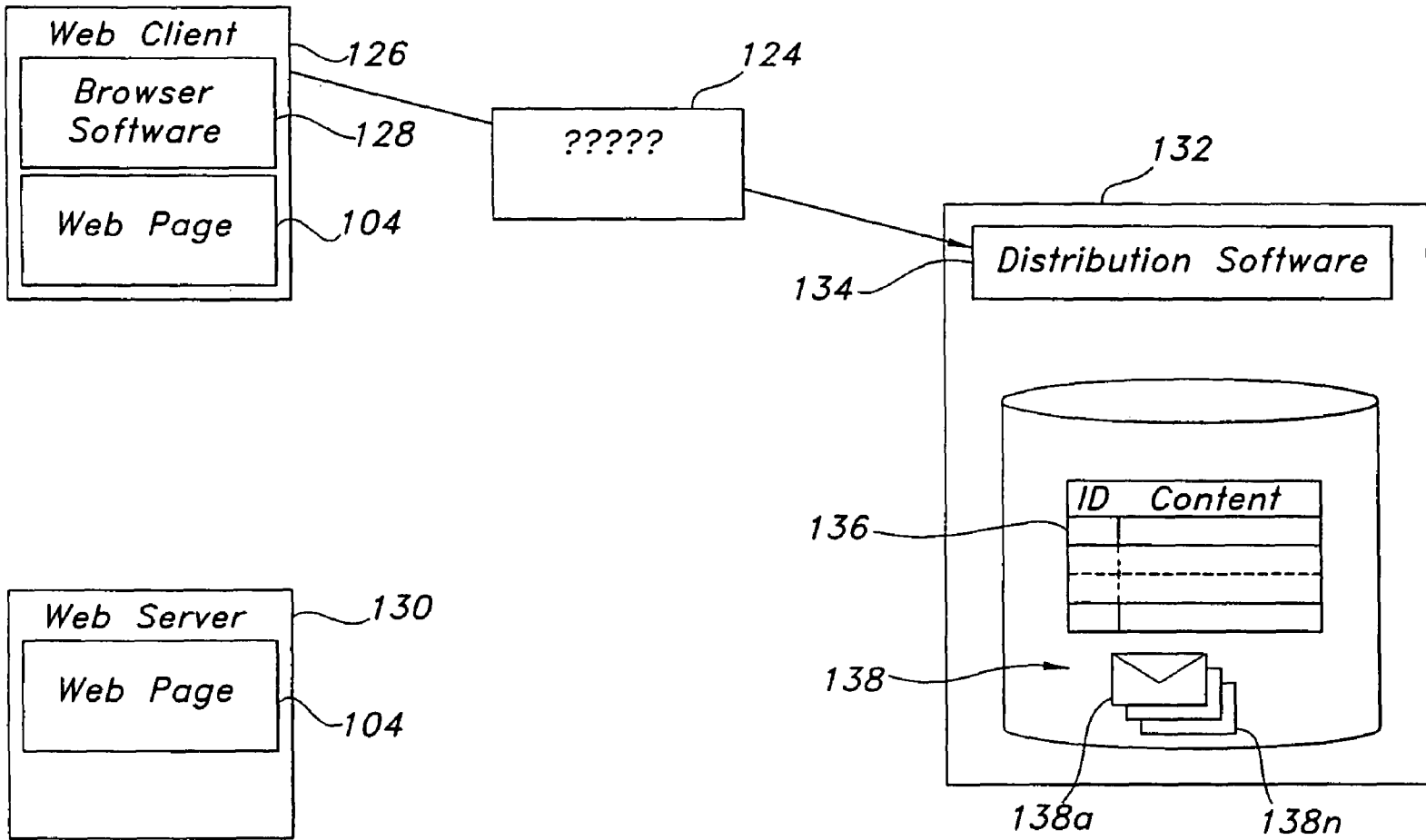


FIG 7B

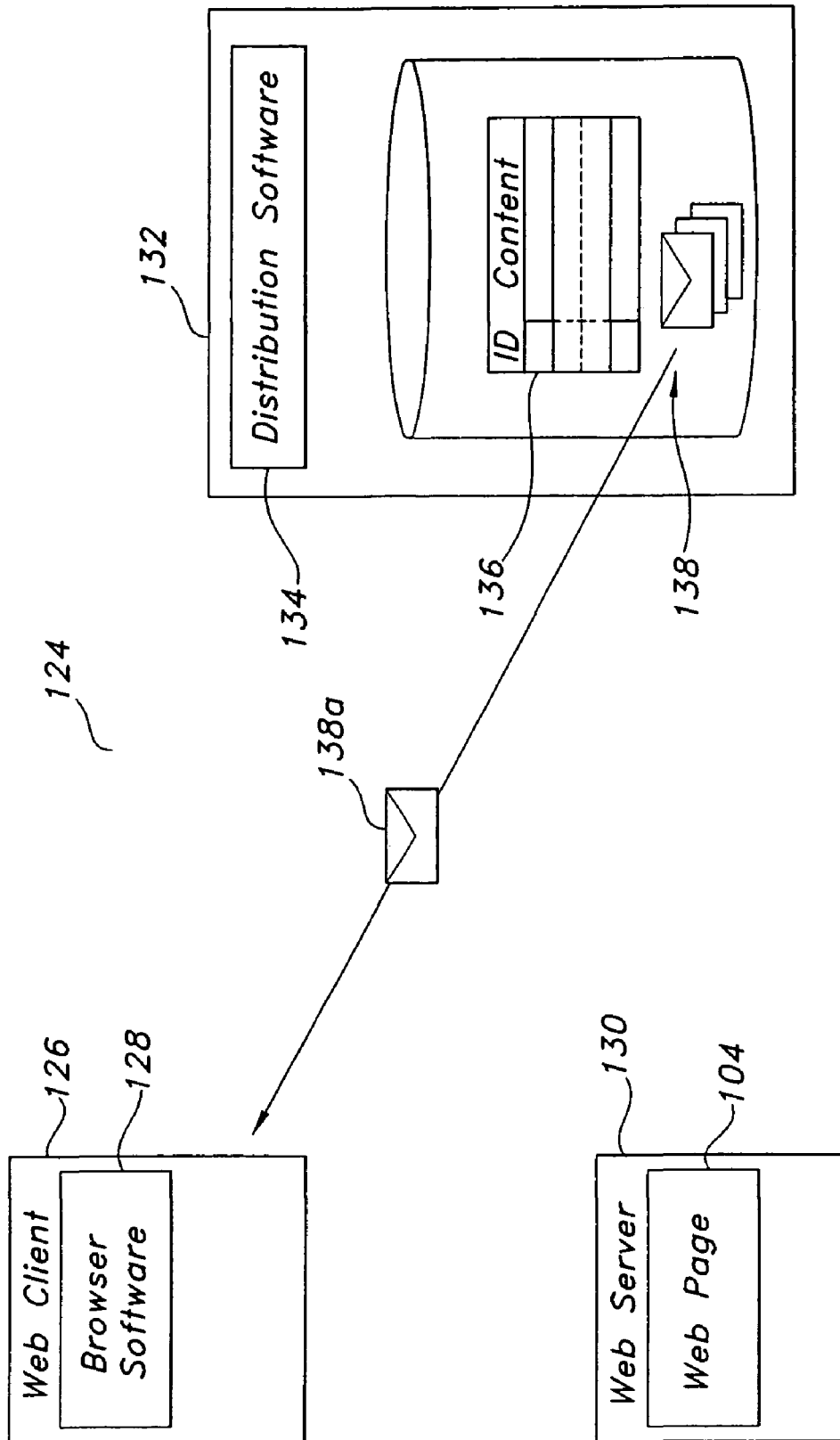


FIG 7C

NEW SHEET

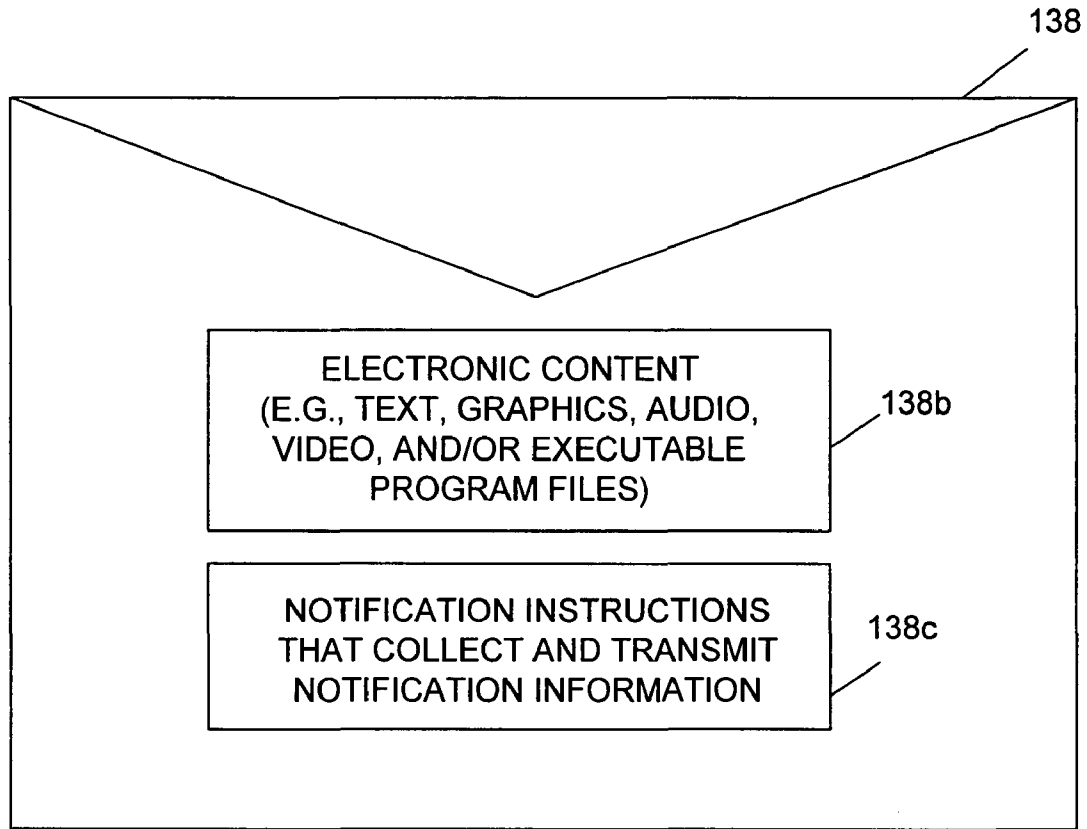


FIG 7D

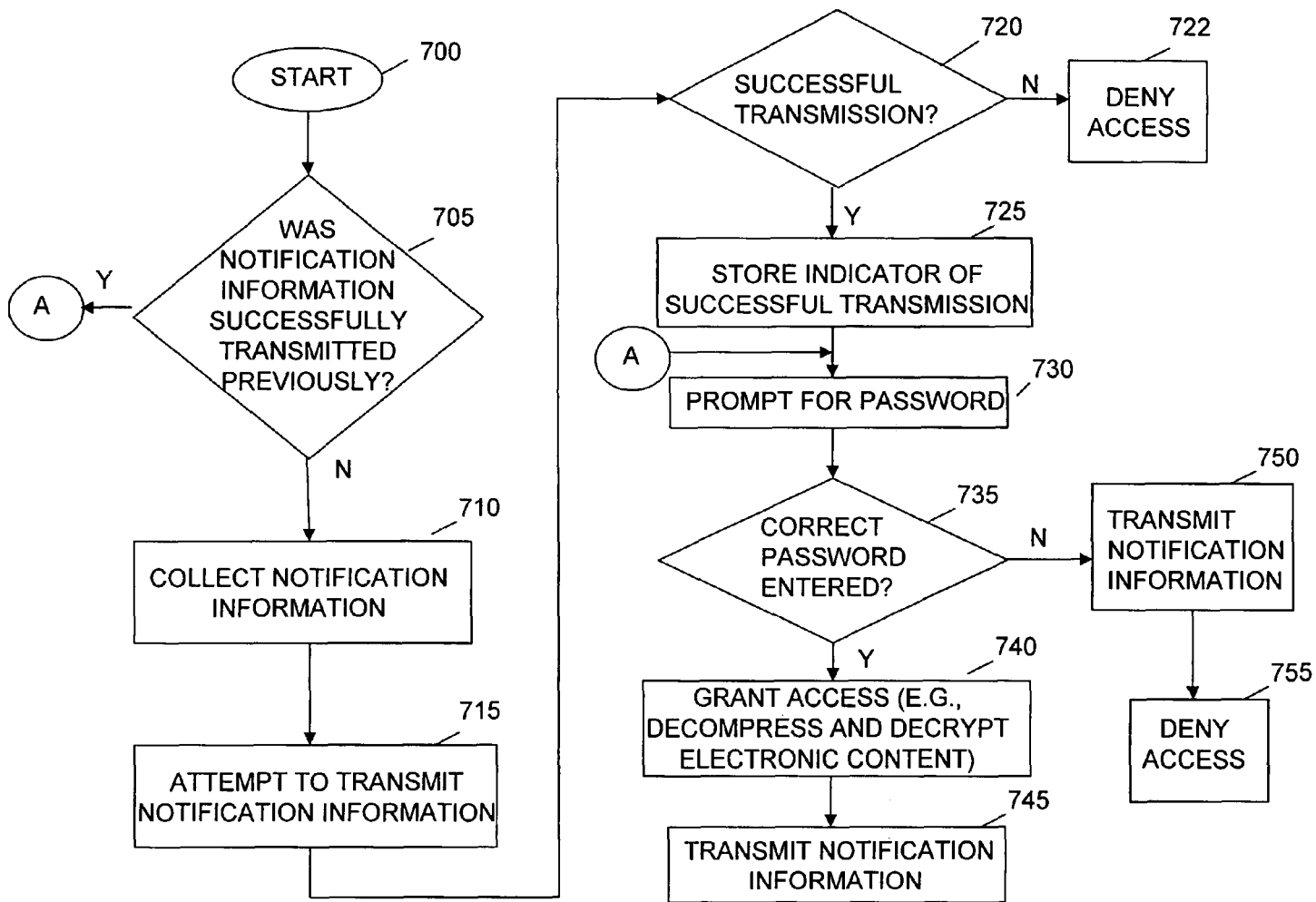


FIG 7E

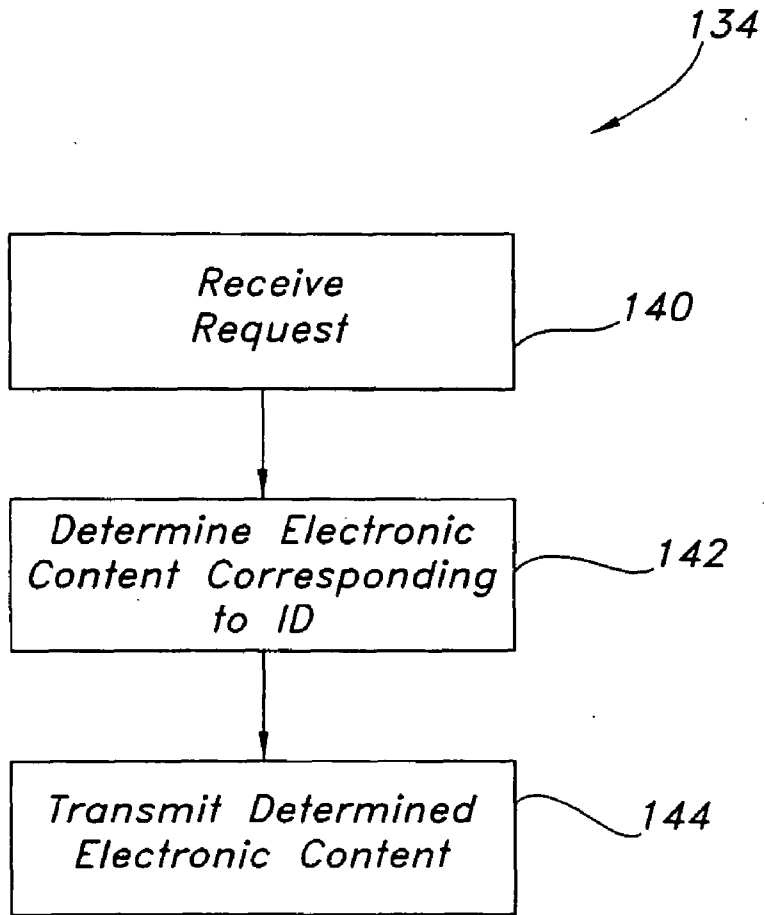


FIG 8

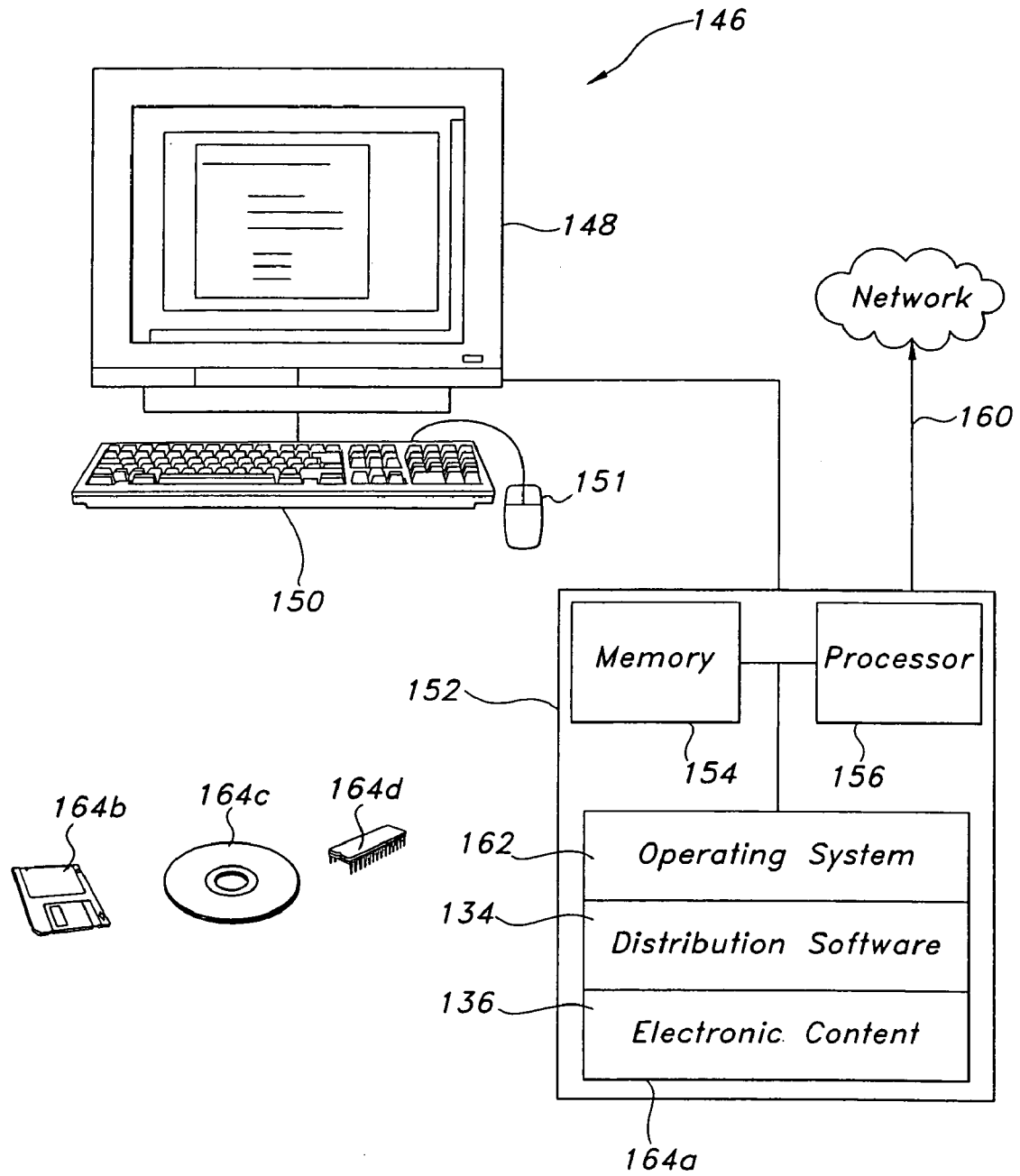


FIG 9

DELIVERING ELECTRONIC CONTENT**CROSS-REFERENCE TO RELATED APPLICATIONS**

This is a continuation of U.S. Patent application Ser. No. 09/231,714 filed Jan. 15, 1999, now U.S. Pat. No. 7,127,515, the disclosure of which is incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION**1. Field of the Invention**

This invention generally relates to delivering electronic content.

2. Related Art

The Internet offers a tremendous amount of information on a wide range of subjects. Many businesses and organizations offer world-wide-web sites that promote products, offer technical assistance, and provide other useful information. Search engines (e.g., Yahoo™) typically can provide lengthy lists of sites related to any topic of interest. Users typically do not want to take the time to investigate more than a handful of these sites. As a result, the vast number of web-sites makes it difficult for web-site providers to lure Internet users to their respective sites.

Since the inception of the web, web-pages have featured links to other sites. A link can appear as underlined text (e.g., "please visit deskgate"), as a picture, or as a sequence of images. Each link has an associated URLs (universal resource locator) that identifies a web-site. A link can be programmed to transport a user to a link's associated URLs when a user selects the link (e.g., by clicking a mouse button).

To attract users to a site, some businesses rent space on other web-pages. For example, as shown in FIG. 1, a newspaper web-page **100** includes a variety of links to other sites. As shown, the web-page includes a banner **102** (i.e., a picture link in the shape of a banner) linked to a resort's web-site. By selecting the link, the user is transported to the resort's web-page as shown in FIG. 2.

SUMMARY

In general, in one aspect, a method of delivering electronic content includes providing instructions that cause a first computer to collect information including an e-mail address, and transmitting the collected information to a second computer. The second computer processes the transmitted information by selecting electronic content for transmission to the e-mail address and e-mailing the selected electronic content.

Embodiments may include one or more of the following. The instructions can be web-page instructions such as HTML. The instructions can be of a form. The instructions can collect the information by querying the computer or by receiving user input. The information can include demographic information and/or system information.

The processing can be done by a program such as a script (e.g., a CGI script). A URLs (universal resource locator) displayed at a browser using the instructions may not be altered by the transmitting of the collected information. The processing can select electronic content based on the transmitted information. The electronic content can include text, graphics, audio, video and/or executable instructions.

The information transmitted can include identification of the instructions that transmitted the information and/or identification of a site that transmitted the information.

In general, in another aspect, a method of delivering electronic content includes providing web-page form instructions that cause a first computer to interactively collect an e-mail address from a user and transmit information including the collected address information to a second computer. The method further includes processing the transmitted information at the second computer by using the transmitted information to select electronic content and e-mailing the selected electronic content to the transmitted e-mail address.

In general, in another aspect, a method of delivering electronic content includes storing electronic content corresponding to different sets of instructions, receiving a request for electronic content produced by one of the sets of instructions, the request including an e-mail address, and selecting electronic content from the stored electronic content based on the received request. The selected electronic content is transmitted to the e-mail address included in the request.

In general, in another aspect, a computer-implemented method of providing access to electronic content includes displaying in a browser a web-page that includes a link corresponding to electronic content and in response to a user's selection of the link, collecting information without modifying the web-page displayed in the browser. The collected information is transmitted to a remote server, and electronic content from the remote server is sent to the e-mail address based on the collected information.

In general, in another aspect, a computer program, disposed on a computer readable medium, includes instructions for causing a first computer's processor to receive information collected by instructions at a second computer, and based on the received information, select electronic content and transmit the electronic content to an e-mail address included in the received information.

Advantages may include one or more of the following. By linking an e-mail based electronic content delivery system to a web-page, businesses can enjoy the benefits of reaching "web-surfers" without the cost and/or computer resources needed to maintain a web-site. Linking in this manner also provides Internet users with the ability to get more information about a topic without leaving a web-page and without waiting for graphics and other information to be transmitted to their browser. A business providing electronic content can not only receive demographic data describing interested users, but also can determine which web-pages are most effective in producing requests for information.

Other advantages of the invention will become apparent in view of the following description, including the figures, and the claims.

DRAWING DESCRIPTIONS

FIG. 1 is a screenshot of web-page that includes a banner, according to principles of the invention.

FIG. 2 is a screenshot of a web-page reached via the banner of FIG. 1.

FIG. 3 is a screenshot of a web-page that includes a link, according to principles of the invention.

FIG. 4 is a screenshot of a submission confirmation window, according to principles of the invention.

FIG. 5 is a screenshot of an e-mail message including electronic content, according to principles of the invention.

FIG. 6 is a listing of web-page instructions, according to principles of the invention.

FIGS. 7A-7C are diagrams illustrating delivery of electronic content, according to principles of the invention.

FIG. 7D is a block diagram of an embodiment of electronic content, according to principles of the invention.

FIG. 7E is a flow diagram showing steps of processing notification instructions, according to principals of the invention.

FIG. 8 is a flow chart of distribution software, according to principles of the invention.

FIG. 9 is an exemplary diagram of a computer system, according to principles of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 3, a web-page **104** viewed by a network browser (e.g., Netscape™ Navigator) uses text and graphics to present information to a user. As shown, the text and graphics include information related to a business enterprise. The web-page **104** also includes a form **106** that accepts user input. As shown, the form **106** includes a text entry control **108**, and a submit button **110**. The form **106** also provides a graphic image **112** designed to attract attention. As shown, the form assumes the shape traditionally associated with banner-links (e.g., a bordered rectangle) but other shapes or formats could be used. The banner shape can communicate to a user that the form **106** is associated with a web-site other than the site the user is currently visiting. The form **106** can include other user input controls (not shown), for example, checkboxes that identify different areas of interest (e.g., "send me information on golf clubs" and "send me information on golf vacations").

Unlike a conventional banner-link, interaction with the form **106** does not transport the user to a different web-site. Instead, submitting entered information into the form (e.g., by typing information into the text box and then clicking the submit button **110**) transmits the information entered by the user to a remote web-server without changing the current URLs being displayed by the browser. The remote web-server uses the transmitted information to select and deliver electronic content (e.g., text, graphics, audio, video, and executable instructions) via e-mail. Co-pending U.S. patent application Ser. No. 09/199,150 entitled "Tracking Electronic Content" filed Nov. 24, 1998, now issued as U.S. Pat. No. 6,751,670, describes an electronic content delivery system, and is incorporated by reference.

Referring to FIG. 4, as shown, a user has entered a network e-mail address into the text field **108** and clicked the submit button **110**. This action initiates transmission of the entered information to the remote web-server. After submitting the information, a window **114** appears informing a user that the information has been transmitted. The feedback provided by the window **114** prevents users from making repeated submissions in the mistaken belief their request failed.

FIG. 5 shows the interface for an e-mail client. After the remote web-server has received the transmitted information, it selects the appropriate electronic content and e-mails the selected electronic content to the specified e-mail address. The requestor then can view or otherwise access the delivered content using the e-mail client. As shown, the electronic content may be transmitted as an e-mail attachment **120**. By delivering electronic content via e-mail, users can request information without interrupting their use of a currently displayed web-page **104** and without waiting for a linked site's web-page to load. Additionally, a business can deliver

the content to an Internet user without the cost and expense of maintaining a web-site or reserving an Internet address.

Referring to FIG. 6, a network browser constructs a web-page's appearance from web-page instructions **104**. These instructions **104** can be expressed in HTML (Hypertext Markup Language), Java, or other formats. When a user visits a web-page, the instructions **104** for the page are transmitted to the user's computer for processing by the user's browser. The instructions **104** describe the appearance and behavior of web-page elements. For example, the instructions describe the form **106**, the graphic image **112**, the text control **108**, and submit button **110**. The instructions **104** include instructions **120** for transmitting collected information to the remote web-server for processing. As shown, the instructions **106** identify a program **122** at a remote web-server and specify values for different parameters **124a-124c**. The remote server program processes the parameters to select electronic content to deliver to a specified e-mail address **108**. As shown, the program is a CGI (Common Gateway Interface) script, however, programs written in other programming languages can also process the collected information (e.g., a Perl script or a Java or C++ program).

As shown, the instructions **106** transmit the e-mail address **124c** interactively collected from a user and an identification of the electronic content **124b** to deliver to the e-mail address specified **124c**. Instead of hard-coding the content to deliver **124b**, the instructions **120** can transmit an I.D. that identifies electronic content to transmit. For example, different I.D.s can be assigned to different sets of instructions **120**. That is, an I.D. for the golf promotion form may be "001" while the I.D. for a car promotion form may be "002". Though the same instructions **120** can be incorporated into different web-pages, the remote server can use the I.D. to select the electronic content to transmit (e.g., information on the golf or car promotion). By using an I.D. instead of hard-coding a reference to electronic content, electronic content transmitted to a user can be easily altered.

The instructions **106** can be copied into different web-pages to reach more web users. To identify the site that produced a request for electronic content, the instructions **106** can transmit a site identification token **124a** of the site transmitting the information. This information can be hard-coded (as shown) or dynamically determined by interacting with a browser's API (Application Programming Interface). By transmitting the site token **124a**, the remote web-server can identify which web-pages produced the most number of requests for content.

The instructions **106** can be configured to interactively collect a wide variety of information from a user in addition to an e-mail address. Such information can include demographic information (e.g., name, address, and age) or information describing a user's interests. The electronic content transmitted by the remote server can be selected based on this information.

Additionally, the instructions **106** can dynamically access a body of information stored, for example, on the user's computer, and then transmit that information to the remote web-server. For example, the instructions can access a Windows™ registry on the user's computer to collect user and system information relating to the computer executing the instructions.

Though the instructions **106** shown produce a form, the instructions **106** that collect an e-mail message by querying a user's computer (e.g., by accessing the Windows™ registry) could instead present a simple picture or text (e.g., "Click here for e-mail information on golf"). When a user clicks on the picture or text, the instructions **106** dynami-

cally collect the user's e-mail address and other information from the system and transmit the collected information to the remote server without requiring any data entry by the user.

Referring to FIG. 7A-7C, a remote web-server **132** delivers electronic content **138** based on a user's interaction with a web-page **104**. As shown in FIG. 7A, a user's computer **126** runs browser software **128**. When the user navigates (e.g., by following a link or entering a URL) to a web-site, the web server **130** for that web-site transmits web-page instructions **104** to the user's computer **126**. The user's browser **126** processes the web-page instructions **104** for display (as shown in FIG. 3).

Referring to FIG. 7B, the web-page **104** includes instructions **106** for collecting and transmitting information to the remote server **132**. When a user submits a request for electronic content (e.g., clicking the submit button **110**), the information **124** collected from a user and/or system is transmitted to the remote web-server **132**. As described above, the information **124** includes an e-mail address and can include other information such as an I.D. and/or the address of the site **126** producing the request **124**.

Referring to FIG. 7C, the remote web-server **132** includes a program **134** for processing the transmitted information **124**. The program **134** can be a CGI script or alternatively a Perl, Java, or C++ program. The remote web-server also stores electronic content **138** for transmission to a requesting user. The remote web-server **132** also may include a table **136** that stores the electronic content **138** that should be sent in response to an I.D. included received information. The remote web-server **132** selects and transmits the electronic content **138a** via e-mail to the e-mail address specified in the received information **124**.

The remote web-server **132** produces reports based on requests that indicate which addresses received content, which web-pages produced content requests, and demographic information describing the user's requesting information. Thus, businesses can closely track their efforts at reaching users.

The remote web-server **132** can store electronic content **138** corresponding to any number of different sets of instructions **106** (e.g., different forms). Thus, a single web-server **132** can provide electronic content delivery for a large number of different businesses or organizations. Processing requests for content typically consumes considerable computational resources on the processing computer. In addition, storing the content **138** typically requires a large volume of non-volatile storage. By letting a remote web-server dedicated to processing requests handle delivery and storage of content, the computers associated with the various enterprises will not be slowed or otherwise burdened by the processing of requests during business hours.

Referring to FIG. 7D, the electronic content **138** may include electronic content **138b** such as text, graphics, audio, video, and/or executable files. Electronic content **138** may also include notification instructions **138c** that may be executable instructions that collect and transmit notification information. The notification instructions **138c** may be configured to control access to the electronic content **138b**. Further, different electronic content may use different file formats. When executed, notification instructions **138c** can determine whether a previous attempt to access the electronic content **138b** resulted in success (e.g., successful transmission of notification information or receipt of an access granting message). The notification instructions **138c** may interactively collect notification information from a recipient. The notification instructions **138c** may interac-

tively collect notification information from a recipient. The notification instructions **138c** may also collect information by querying the recipient's computer system.

FIG. 7E is a flow diagram showing steps of processing the notification instructions, according to principles of the invention, starting at step **700**. At step **705**, a check is made whether notification information was transmitted successfully previously. If successful, then the process continues at step **730**. Otherwise, if the notification information has not been successfully transmitted, then at step **710**, notification information may be collected. At step **715**, an attempt to transmit the notification information may be made. At step **720**, a check may be made to determine if the transmission of notification information was successful. If not successful, then at step **722**, access is denied to the electronic content. If, however, the transmission of notification information was successful, then at step **725**, an indicator may be stored indicating successful transmission. At step **730**, a prompt for a password may occur. At step **735**, a check may be made whether a correct password was entered. If the password was not correctly entered then, at step **750**, an attempt to transmit notification information may occur. At step **755**, access to electronic content may be denied. If, however, a correct password was entered, or, if prompted for, then at step **740**, access may be granted to the electronic content (e.g., decompress and decrypt). At step **745**, an attempt to transmit notification information may occur.

Referring to FIG. 8, the program **134** running on the remote web-server **132** processes information to select and e-mail electronic content to a specified e-mail address. After receiving a request for electronic content (**140**), the program **134** may repress transmission of information to a user's browser (e.g., for example by issuing an "echo status: **202** No Response" command). This command prevents a user's display from being altered.

The program **134** can use the I.D. to determine which electronic content to send to a specified address (**142**). The program **134** can also analyze demographic data included in the received information **124** to select electronic content for delivery. After selecting the electronic content, the program **134** can e-mail the determined content (**144**) to the e-mail address specified in the request **124**.

Referring to FIG. 9, a computer platform **146** includes a monitor **148**, input devices such as a keyboard **150** and mouse **151**, and a digital computer **152**. The digital computer **152** includes memory **154**, a processor **156**, a mass storage device **164a** (e.g., a hard disk) and a network connection **160** for transmitting and receiving data. The mass storage device **164a** includes instructions for an operating system **162** (e.g., Windows™ 98), distribution software **134**, and electronic content **138**. These instructions can be stored in other computer readable mediums such as a floppy disk **164b**, a CD-ROM drive **164c**, or other hardware such as an EPROM **164d**. In the course of operation, the stored instructions are transferred to memory **154** and the processor **156** for execution.

The techniques described here are not limited to any particular hardware or software configuration. The techniques may be implemented in hardware or software, or a combination of the two. Preferably, the techniques are implemented in computer programs executing on programmable computers that each include a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device, and one or more output devices. Program code is applied to data entered using the input device to perform

the functions described and to generate output information. The output information is applied to one or more output devices.

Each program is preferably implemented in a high level procedural or object oriented programming language to communicate with a computer system. However, the programs can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language.

Each such computer program is preferably stored on a storage medium or device (e.g., CD-ROM, hard disk or magnetic diskette) that is readable by a general or special purpose programmable computer for configuring and operating the computer when the storage medium or device is read by the computer to perform the procedures described in this document. The system may also be considered to be implemented as a computer-readable storage medium, configured with a computer program, where the storage medium so configured causes a computer to operate in a specific and predefined manner.

Other embodiments are within the scope of the following claims.

What is claimed is:

1. A method of providing electronic content, the method comprising the steps of:

providing instructions that causes a first computer to dynamically transmit a network address to a second computer in response to a request for data;

processing the request for data at the second computer; transmitting the requested data to the network address; and

attempting to transmit notification information across a network upon an attempt to access the requested data, wherein the instructions include executable instructions to collect the notification information and the instructions are configured to grant or deny access to the requested data based on the results of the attempt to transmit.

2. The method of claim 1, wherein the step for providing instructions comprises providing web-page instructions.

3. The method of claim 2, wherein the web-page instructions comprise HTML instructions.

4. The method of claim 2, wherein the instructions comprise form instructions.

5. The method of claim 1, wherein the instructions comprise instructions that query the computer for information.

6. The method of claim 1, wherein the instructions comprise instructions that receive user input.

7. The method of claim 1, wherein the request comprises demographic information.

8. The method of claim 1, wherein the request comprises system information.

9. The method of claim 1, wherein the network address identifies the first computer.

10. The method of claim 9, further comprising the step of presenting an invitation to request the data, prior to the providing step.

11. The method of claim 1, wherein the network address comprises an identifier associated with a user using the first computer.

12. The method of claim 1, wherein the requested data comprises at least one of text, graphics and audio information.

13. The method of claim 1, wherein the requested data comprises video information.

14. The method of claim 1, wherein the requested data comprises executable instructions.

15. The method of claim 1, wherein the step of processing comprises selecting the electronic content based on transmitted notification information.

16. The method of claim 1, wherein the notification information includes at least one of:

identification of the instructions that transmitted the notification information, and

identification of a computer that transmitted the notification information.

17. A method of delivering electronic content, the method comprising the steps of:

providing web-page instructions that induces a first computer to dynamically transmit a network address to a second computer in response to a request for data;

processing the request at the second computer to select electronic content and transmitting the electronic content to the network address; and

attempting to transmit notification information from the network address when triggered by an accessing event,

wherein the instructions include executable instructions to collect the notification information and the instructions are configured to selectively grant or deny access to the electronic content based on results of the attempt to transmit.

18. The method of claim 17, wherein the network address identifies a user requesting the data.

19. A computer-implemented method of providing access to electronic content, the method comprising the steps of:

displaying in a browser a web-page that includes a link corresponding to electronic content;

dynamically transmitting, in response to a selection of the link, information including a network address to a remote server;

sending the electronic content from the remote server to the network address based on the transmitted information, wherein the electronic content contains executable instructions; and

attempting to transmit notification information when an attempt to access the electronic content occurs,

wherein the executable instructions collect the notification information and is configured to selectively grant or deny access to the electronic content based on results of the attempt to transmit.

20. The computer-implemented method of claim 19, wherein the network address is an identifier associated with a selector of the link.

21. A computer program, disposed on computer readable medium, the computer program including instructions to cause execution of the steps for:

displaying in a web page a link representing electronic content;

dynamically transmitting, in response to selection of the link, information including a network address to a remote server;

sending electronic content from the remote server to the network address, the electronic content containing executable instructions; and

attempting to transmit notification information when triggered by an access event,

wherein the executable instructions collect the notification information and selectively grants or denies access to the electronic content based on the results of the attempt to transmit.

22. The computer program of claim 21, wherein the network address is a user Internet identifier.