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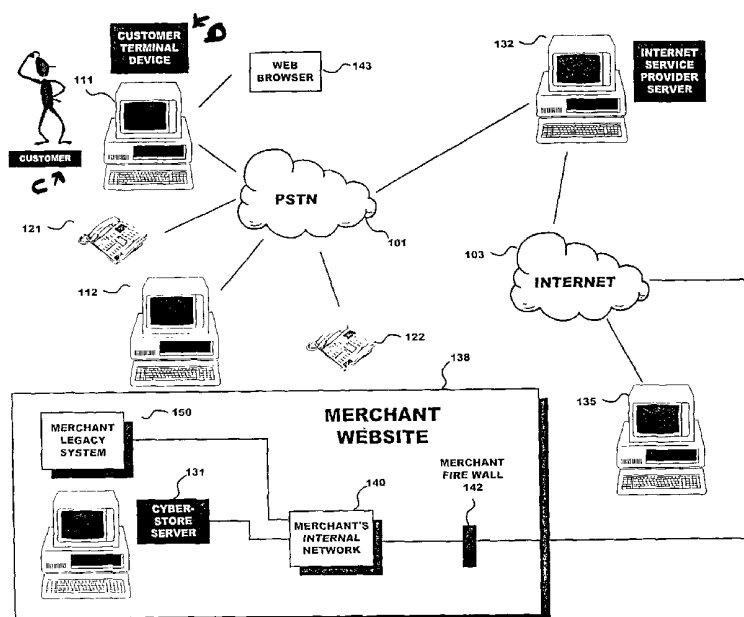
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(54) Title: SYSTEM FOR PRESENTING CUSTOMER CONSTRAINED PURCHASE CHOICES IN AN ON-LINE STORE



(57) Abstract: The present invention is directed to an apparatus and a method for presenting customer-constrained purchase choices that includes a system for storing data representative of goods available for purchase by consumers in an on-line mode (103), a system for obtaining data (101) from the customer representative (111) of consumer-specific factors that relate to goods available for purchase by consumers and a system for generating a view (131) of the goods for the customer that is modulated by the customer-specific factors relating to the customer.



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## System For Presenting Customer Constrained Purchase Choices In An On-Line Store

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### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention.

This invention relates to system for managing the on-line retail sales of goods  
10 where the purchase choices presented to the customer are constrained by customer-specific limitations to avoid the instance of the customer encountering a product selection that is unavailable for purchase.

#### 2. Description of the Related Art.

It is a problem in the field of retail sales of goods that the customers'  
15 expectations relating to the availability of goods offered for sale are not always consistent with the reality of what stock is presently available in the store. On-line retail sales also suffers from the same difficulties in maintaining an adequate stock of products to fill orders without investing excessive capital to oversupply each potential customer choice. Therefore, of practical necessity, there will be either entire lines of  
20 products (hereafter referred to as "product genus") or a given product in a particular size, shape or the like (hereafter referred to as "product species") that are out of stock for various periods of time as the retail establishment replenishes their supply of goods or otherwise as goods are sold out. However, a customer who browses a website expects that the their order of goods offered by a merchant for purchase will be  
25 accomplished quickly and completely primarily because of the customer's perception of the nature of e-commerce transactions.

Where the website is directed to the sale of products otherwise available in chain stores, the array of products presented for sale both in terms of product genus and product species, can greatly increase because the limits otherwise placed on the  
30 presentation of products by the physical size of any specific brick and mortar facility are over come in the case of a chain store website or cyber-store. Virtually all products,

usually otherwise only available in individual stores in certain geographic regions, together with a sometimes vast inventory of products on order and in a distribution system supporting store operations, can be presented for purchase on such a website. Consequently, browsers expectations can be significantly heightened when viewing a  
5 large chain store's website on which virtually all products are presented for purchase.

However, the merchant typically does not have access to sufficient stock to timely fill all orders for all potential choices of goods that are presented to the user. Thus, the customer may quickly become frustrated or disappointed by the unavailability of the selected product due to their perception that on-line sales sites are inherently  
10 better adapted to deliver all products offered for sale when compared to traditional brick and mortar retail sales operations. Such frustration and disappointment, if experienced on a broad scale by potential on-line customers , results not only in lost sales but also potentially permanent and wide spread damage to the merchant's reputation.

15 For example, in the field of on-line footwear sales, the customer expects that all styles of shoes displayed are available for purchase in all sizes and all colors offered. The on-line merchant, however, suffers from the same constraints imposed by the market on traditional retail sales locations, in that the most popular combinations of sizes, styles and colors are typically sold out quickly. Existing on-line sales software  
20 fails to address this problem.

### **SUMMARY OF INVENTION**

The above-described problems are solved and a technical advance is achieved by the present system for presenting customer-constrained purchase choices in an on-  
25 line store which functions to present the customer with only goods which, once purchased, can be delivered to the customer (or made available for convenient pick-up by the customer) within a relatively short period of time. This goal is achieved by presenting for purchase only a subset of all possible choices of a particular product species within a given product genus which represent goods that are immediately  
30 available for purchase and delivery. This methodology ensures that the customer's

order can be fulfilled with a high degree of certainty, since the customer browsing the website is only presented with representations of goods presently in stock. As a practical matter, if a particular product is unavailable because it is out of stock, it is inadvisable to present the customer with the option to purchase this product, since it engenders a feeling of frustration on the part of the customer. If the stock can be replenished in a rapid manner, then the presentation of out-of-stock items which results in the order being placed in a back-order mode does not present a problem, since fulfillment is delayed only by an acceptable amount of time.

The present system, configured for presenting customer-constrained purchase choices, ensures that a customer browsing a website is not presented with products that are not readily available for purchase and delivery, and does so by generating a template which represents the customer-specific limitations with respect to the type of goods of interest to the customer. For example, in the field of footwear, the customer's size is a primary delimiting factor and the stock available in a customer-specified size is, in the case of self-help product presentation format, presented to the customer in the product-selection process. If the customer changes the size defined in this interaction, the present system for presenting customer-constrained purchase choices only presents comparable product choices to the customer in the other size that has been selected by the customer. In this manner, the customer is presented with a view of the available stock of products that reduces the opportunity for customer frustration. The initial customer view generated by the on-line interaction with a customer is maintained throughout the transaction to avoid the customer encountering a choice in another category of goods that would raise the question of availability in the customers purchase universe.

The use of a customer-centric view of inventory represents an improvement over existing "flat" views of inventory presently in use in on-line sales software systems. The customer-centric view can be modulated by any factor that the merchant believes to be relevant to attaining customer satisfaction.

In accordance with the present invention, therefore, an on-line system is provided for presenting customer-constrained purchase choices that comprises a system

for storing data representative of goods available for purchase by consumers in an on-line mode, a system responsive to a consumer establishing a communication connection with the on-line system, for obtaining data representative of consumer-specific factors that relate to goods available for purchase by consumers and a system for generating a  
5 view of the goods for the customer that is modulated by customer-specific factors relating to the customer.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a high-level architectural drawing illustrating the primary  
10 components of a system that operates in accordance with the present invention.

Figure 2 is a flow diagram illustrating the manner by which a consumer may establish connection between a terminal device and a merchant website.

Figure 3a is a flow diagram illustrating hierarchy-based navigation associated with the "browser" functionality.

15 Figures 3b-3l are web pages illustrating various aspects of the "browser" functionality of the present invention.

Figure 4a is a flow diagram illustrating the "shoe finder" functionality of the present invention.

20 Figures 4b-4f are web pages illustrating various features of the "shoe finder" functionality of the present invention.

### **DETAILED DESCRIPTION OF THE INVENTION**

#### 1. Glossary of Terms and Acronyms.

The following terms and acronyms are used throughout the detailed description.

25 The Internet -- a vast number of computers, network links between computers, and protocol and other interface standards that provide a communication network for computer users that provide a communication network for computer users to exchange data with other computer users.

30 Client Server -- a model of interaction in a distributed system in which a program at one site sends a request to a program at another site and waits for a

response. The requesting program is called the "client," and the program which responds to the request is called the "server".

World Wide Web ("WWW") -- a visual interface for computer users operating on the Internet which permits a server computer, called a website, to send graphical web pages of information to remote computer users connected to the Internet and further allows remote computer users to display the web pages on their system terminals. The web pages often contain control regions, such as simulated push buttons, that allow the computer user to acquire and display additional Web page related information in hypertext fashion, typically HTTP. Uniform Resource Locator ("URL") -- and Internet address corresponding to each client and server, typically expressed with HTTP protocol when operating a website.

Hyper Text Markup Language ("HTML") -- a system for marking text files for Web presentation.

Web Browser -- The software on a client that requests Web resources and renders HTML documents.

Cyber-stores -- an electronic commerce application that is accessible via the Internet and which represents an economical, immediate distribution channel for product sales, marketing, trading and technical support. Any product or service is suitable for sale through a cyber-store.

## 2. General Architecture of the Invention.

The communications environment illustrated in Fig. 1 includes a communications network 101 which comprises a part of the Public Switched Telephone Network (PSTN) that serves a plurality of customer terminal devices 111, 112 (such as personal computers, personal communication devices, wireless communications devices, and the like) and telephone station sets 121, 122. The operation of such a communications network 101 is well known and is not described in detail herein. In addition, Internet 103 is provided to exchange data communications among a plurality of World Wide Web ("Web") servers 131, 132, 135 connected thereto. The operation of the Internet 103 is well known and is not described in detail herein. Access to the Internet 103 is provided in well-known fashion to customers resident at customer

terminal devices 111, 112 via Internet Service Providers using Web servers 132, 135 which interconnect communications network 101 with Internet 103. Thus, the customer at customer terminal device 111 accesses the Internet 103 by activating the Web browser process 143 that is resident on customer terminal device 111 and  
5 initiating a modem connection from customer terminal device 111 through communications network 101 to Internet Service Provider Web server 132. The Internet Service Provider Web server 132 enables the customer to access Internet 103 using the Web browser process 143 to gain access to the plurality of Web servers that are interconnected by the Internet 103. As part of the Internet access, the Internet  
10 Service Provider Web server 132 that the customer contacts typically provides a display to the customer's terminal device 111, which display is termed a Web page, which is downloaded from the Internet Service Provider Web server 132 to the customer terminal device 111. The customer's Web browser process 143 is the proxy or pseudo-client and enables the customer to talk to an Internet Service Provider Web server 132  
15 via a set of communication scripts. These scripts are typically Java Enabled Internet Browser scripts resident on the customer's personal computer 111. The Internet Service Provider Web server 132 can be equipped with a Internet bookmark icon that enables a customer who clicks on the displayed icon to be hyperlinked to the cyber-store server 131 in which the present system for presenting customer constrained purchase choices  
20 in an on-line store generator is operational. Server 132 may be configured with any conventional means to permit it to be hyperlinked to the cyber-store server 131 which are well known and are not described here.

Referring to Fig. 2, the customer at step 201 initiates an Internet communication connection by activating the Java Enabled Internet Browser 143 executing on the  
25 customer terminal device 111 to initiate a local telephone call via communications network 101 to the telephone access number of the customer's Internet Service Provider. This communication connection is via the Public Switched Telephone Network (PSTN) and serves to provide the customer with a physical connection from the customer's terminal device 111 to the Internet Service Provider's Web server 132.  
30 The Internet Service Provider's Web server 132 that is accessed in this manner

transmits a Web page for display on the customer terminal device 111 at step 202. As part of the Web page, the Web server 132 can display an icon indicative of the availability of cyber-store server 131.

The customer at step 203 can initiate access to the cyber-store server 131 for example, by inputting the URL of the cyber-store server 131 by clicking on the displayed cyber-store icon which is presented by the Web page of the Internet Service Provider Web server 132 to which the customer is connected. The Internet Service Provider Web server 132 at step 204 hyperlinks the customer to the cyber-store server 131 when the customer clicks on the displayed icon, which actions transmit a "download" message to the Internet Web store generator. At step 205 the cyber-store server 131 transmits the Internet Web page to the customer terminal device 111. The cyber-store server 131 at step 206 provides the customer with a display screen that contains data entry fields to enable the customer to input customer identification and product search terms indicative of the product. At step 207, the keystrokes inputted by the customer are used by cyber-store server 131 to traverse the directory contained therein to determine whether this customer has previously logged into the Web store generator and provided customer-specific data for use in a store search/generation process.

A set of software resident on a website which executes on a cyber-store server 131 is configured to generate cyber-store web pages from a website. The website itself comprises a sequence of web pages that can be displayed to a customer on customer terminal device 111. The web pages are well-known screen displays and typically comprise customer-data retrieval and editing screens, product-category listings, product listings, product descriptions, product-order forms, and the like, as are more particularly described herein.

The products that are sold by the retail establishment via the Internet store are typically warehoused in at least one, and in many cases, a number of geographically separated distribution centers. The products stored in these distribution centers are typically catalogued and inventoried by software systems as is well-known in this technology. The data representative of the products sold by the retailer and their



availability are stored in the memory of a database management system and managed therein via use of database management software. This product-data collection and management can include data representative of products in transit from suppliers to the distribution centers, as well as, orders filled by the distribution centers and in transit to  
5 customers. The overall data management task is effected by the use of data processing software that typically serves to provide a customer with a virtual image of the entirety of the inventory of the Internet store.

The merchant's internal network 140 is linked via a conventional merchant firewall 142 to the Internet 103. The merchant's internal network 140 is configured  
10 with a conventional merchant's legacy system 150. The merchant's internal network 140 is further linked to cyber-store server 131. The merchant's legacy system 150 is a data repository for all data, including inventory, product price and promotion information, and required by the cyber-store server 131 to generate merchant website  
138. The internal network 140 is also configured with the necessary database servers  
15 and development servers, not shown or described herein in detail, to provide the system functionalities as herein described. The cyber-store server 131 is configured with an e-commerce engine adapted to operate in a conventional manner that is well-known and is not described in detail herein. Merchant website 138 and its associated components-  
20 legacy system 150, internal network 140 and cyber-store server 131 are configured to present customer-constrained purchase choices and includes a conventional database and processor operable: (i) for storing data representative of goods available for purchase by consumers in an on-line mode through a cyber-store; (ii) to respond to a consumer establishing a communication connection with the on-line system for obtaining the data representative of customer-specific factors that relate to the goods  
25 available for purchase; and (iii) for generating a view of the goods to a customer that is modulated by the customer-specific factors relating to the customer. The merchant website 138 is further configured to index the data representative of the goods available for purchase by a plurality of consumer-specific factors that include: gender, size, color, style, and the like. The website cyber-store server 131 is operable to present to a  
30 customer a data entry screen on a terminal device that is used by a customer to establish

the communication connection and to request data from a customer that is indicative of certain consumer-specific factors. The merchant website 138 is configured to be responsive to a customer and during a pre-determined account data entry is further configured to retrieve data indicative of consumer-specific factors previously entered by the consumer onto the cyber-store server 131. The merchant website 138 may be configured to store edited data retrieved from a customer into a session file. The merchant website 138 is configured with at least one template representative of both the customer-specific factors relating to a customer and available-for-purchase inventory.

The merchant website 138 is created by and interactively associated with the merchant's internal network 140, merchant's legacy system 150 and the cyber-store server 131 to provide to the customer the various features and functionalities as further described herein. The merchant website 138 is typically operated by the merchant but optionally may be created and operated by any entity on behalf of the merchant. The merchant website 138 handles various order processing, shipping, collections, and customer-service tasks associated with the sale of goods through a cyber-store. In an implementation described herein, the merchant website 138 is the site of Payless.com (a footwear retailer providing a complete assortment of affordably priced, quality footwear for men, women and children from all age groups). Merchant website 138 includes software and hardware required for the automatic functions of doing business, which, in the specific implementation described herein, is the sale of shoes to the public through means of a cyber-store, but includes all forms of selling, and marketing for sale, all manner of products and services in commerce.

Thus, the function of the cyber-store website is to present information to a customer who connects to the cyber-store server 131, to thereby enable the customer to select a product and order same from the convenience of their home or office. The customer's expectation is that they can quickly browse through the listing of products that are carried by the cyber-store.

### 3. Product Purchase Process.

In operation, the customer accesses the merchant website 138 by establishing communication between the customer terminal device 111 in cyber-store server 131, as

set forth above, at which time a Web page is presented to the customer on the customer's terminal device 111. The Web page may be formatted to present in any desired presentation product descriptions, promotions and related information which may assist customers in making informed purchasing decisions. Web pages may be  
5 configured with special hyperlinks that permit customers to conveniently select products for viewing and possible purchase. The website may employ hyperlinks in conventional ways and serve as reference mechanisms for the convenience of customers interacting with the merchant's cyber-store via merchant website 138, and such hyperlink functionalities and usage are well-known and not described herein in detail.

10 In an essential feature of the invention, the website of the merchant presents to the customer for purchase only products that are either immediately or otherwise readily available for purchase and delivery. This feature is achieved by configuring the merchant's internal network 140 with the merchant's legacy system 150 and the cyber-store server 131 with appropriate functionalities, optionally including templates or  
15 filters, so that website 138 presents only products that are available for purchase and timely delivery. Customer frustration and disappointment, which can cause severe and permanent damage to the merchant's business, are thereby avoided.

4. Web Page Product Filter/Template Configured to Display For Sale Only Products That are Readily Available for Purchase.

20

In the specific cyber-store implementation presented above at Payless.com, a customer may shop for shoes using at least two functionalities available on the Website—a "browser" and a "shoe finder." The functionalities employ methodologies that operate as a filter/template to block from the theoretical universe of shoes that  
25 might be displayed to a customer any shoes which are not available, either immediately or in the relatively short period of time, for purchase through a cyber-store.

Turning first to the "browser" functionality and referring to Figs. 3a-3j, there is shown in Fig. 3a a flow diagram for hierarchy-based navigation which may be chosen by a customer who desires to browse the Payless.com website. Figure 3a illustrates the  
30 logical navigation structure employed by the specific implementation described below.

After a customer establishes communication with the merchant website 138, the customer will be presented with an initial Web or home page 300, which in the specific implementation is shown in the form of Fig. 3b. Among the various options, which typically are presented in the form of icons or hyperlinks, there are presented a number  
5 of top level categories (“TLC”) representing shoe categories for women, men, girls, boys, infants and specialties. If the customer clicks on a TLC of interest to them, the customer is then presented with a Web page 302 of the kind shown in Fig. 3c, which prompts the customer to identify the size of interest for the specified TLC. Once the customer specifies size, the customer is then presented with the Web page 304 as  
10 shown in Fig. 3d, which prompts the user to select one of the following categories: dress & casual, athletics, boots, speciality or accessories. The categories shown on Web page 304 are those that contain available-for-purchase shoes in the size previously specified by the customer. Once the customer selects a category, a Web page 305, as shown in Fig. 3e, is displayed which shows a list of available shoes in the category  
15 selected, at which point the customer is prompted to select a particular shoe for viewing. After selecting a particular shoe, the customer is presented with Web page 306, as shown in Fig. 3f, which permits the customer to view the specifically selected shoe on the Web page 306 and either choose to add it to a shopping bag or to browse and view other shoes, which in the latter case is effected by the customer choosing the  
20 appropriate location hyperlink on the Web page or by choosing another top level category (“TLC”). As used herein, the term “top level category” refers to one of the following: women’s, men’s, girls’, boys’, infants’, and specialty. If the customer chooses to add the shoe to their shopping bag, they will be presented with Web page 308, as shown in Fig. 3g. Next, the customer can access their shopping bag by clicking  
25 on the “shopping bag” image on the bottom frame, as shown in Web page 308. Web page 310, as shown in Fig. 3h, will be presented after the customer clicks the shopping bag image, and the Web page 310 will show the customer the shoes which the customer has chosen to purchase. Once the customer has decided to check out, the customer is prompted to choose the “check out” button from their shopping bag or the “check out  
30 now” link on the bottom frame. As shown in Fig. 3i, Web page 312, the customer is

then prompted to sign in. At this time, the customer can choose to sign in as a guest, in which case the customer will need to provide the website operator with their billing information. In the alternative, if the customer has registered with the website operator previously, the customer is permitted to sign in as a registered shopper and the  
5 appropriate information will be reused. On a second Web page to the checkout process, Web page 314, as shown in Fig. 3j, a customer is permitted to choose the shipping method for the order, as well as to input the billing and shipping address. On a third and final page of the checkout process, as shown in Web page 315, as shown in Fig. 3k, the customer will be prompted to provide credit card information or to authorize use of  
10 a credit card account already on file on the website. Finally, a confirmation Web page 318, as shown in Fig. 3l, will be displayed and will indicate the confirmation information that the customer will ultimately receive once the order has been successfully submitted online.

A customer may also shop and select shoes for purchase by selecting the “shoe  
15 finder” functionality, with reference to Figs. 4a through 4f, as described below. Shown in Fig. 4a is a flow diagram illustrating the logical structure employed by this search functionality. As shown in Fig. 4b, Web page 400 is first presented on which a “shoe finder” search button is presented. If the customer clicks the “shoe finder” button, Web page 402, as shown in Fig. 4c, is displayed. On Web page 402, the customer may select  
20 a particular size in the TLC (top level) category in which a shoe is sought. Once the size and TLC have been selected by the customer, the customer is prompted to select search options, including all catalog or “only shoes on sale” styles, colors, materials, features and brands, as shown in Web page 404, Fig. 4d. After the customer enters the information requested, the results of a search are presented to the customer on Web  
25 page 406, as shown in Fig. 4e. At this time, the customer is permitted to choose for purchase a specific shoe displayed on Web page 406 or to choose other search options. If the customer wants to change the size or TLC in which the search is to be conducted, she must choose the “shoe finder” hyperlink located on Web page 406. Once the customer selects a shoe for purchase, the customer can place the shoe in her “shopping

bag” at Web page 408, as shown in Fig. 4f. At this point, the process proceeds as explained above and illustrated in web pages 308-318.

The search methodology employed by both the “browser” and “shoe finder” functionalities described above is directed to existing legacy systems resident on the merchant’s legacy system 150 and involves the creation of two files for all shoe sizes and tracking lot numbers. A first file represents and permits adjustments to the merchant’s cyber-store on-hand inventory. A second file represents and permits adjustment to inventory that is reserved in the warehouse for a particular cyber-store. The merchant’s legacy system 150 operating in connection with the merchant’s internal network 140 permits the size and lot files to be downloaded and posted to the cyber-store database tables resident on the cyber-store server 131. As customers purchase shoes through the merchant website 138, the quantity is decremented from the “on-hand” inventory. When the quantity drops to zero and a customer purchases shoes, the quantity will be decremented from the “reserve inventory.” As used herein, “on-hand” inventory refers to that inventory that is shippable to a customer within a twenty-four hour period. On-hand inventory generally includes product that has been shipped from a warehouse to the cyber-store and is waiting to be purchased. As used herein, “reserve” inventory refers to that inventory that is shippable to a customer within 72 hours. Reserve inventory generally includes product that is in a warehouse. In the specific implementation, shoes in a warehouse must first be designated as shipped to the cyber-store before they can be used to fulfill a customer order from a cyber-store. Shoes destined for sale at the cyber-store are physically separated and delivered to a warehouse location designated as the cyber-store. As used herein, the term “shoes available for purchase” means shoes having a lot /identification number: (i) that is associated with a category “TLC,” casual, etc.; (ii) which is published and accessible in the merchant website 138; and (iii) having corresponding “on-hand” or in “reserve” inventory.

As illustrated by the above example, a customer browsing a website configured with the present invention will be presented only with products that are immediately available for purchase or which can be purchased within an acceptable time frame. By

doing so, a merchant is substantially less likely to suffer damage that would otherwise result from offering to customers browsing the merchant's website products which are not available for purchase.

5 While the invention has been described herein with reference to certain preferred embodiments, these embodiments have been presented by way of example only, and not to limit the scope of the invention. Accordingly, the scope of the invention should be defined in accordance with claims that follow.

In the Claims:

What is claimed is:

1. An on-line system for presenting customer constrained purchase choices comprising:

5 means for storing data representative of goods available for purchase by consumers in an on-line mode;

means responsive to a consumer establishing a communication connection with said on-line system, for obtaining data representative of customer-specific factors that relate to said goods available for purchase by consumers; and

10 means for generating a view of said goods for said customer that is modulated by customer-specific factors relating to said customer.

2. The on-line system for presenting customer constrained purchase choices of claim 1 further comprising:

15 means for indexing said data indicative of goods available for purchase by consumers by a plurality of consumer-specific factors which include: size, color, style and the like.

3. The on-line system for presenting consumer constrained purchase choices of claim 2 wherein said means for indexing comprises:

20 means for storing said indexed data defining said consumer-specific factors.

4. The on-line system for presenting customer constrained purchase choices of claim 1 wherein said means for obtaining data comprises:

25 means for presenting said customer with a data entry screen on a terminal device, use by said customer to establish said communication connection, to request data from said customer indicative of said customer-specific factors.



5. The on-line system for presenting customer constrained purchase choices of claim 4 wherein said means for obtaining data further comprises:  
means, responsive to a customer and during a predetermined account data entry, for retrieving data indicative of said customer-specific factors previously entered by said customer into said on-line system.
6. The on-line system for presenting customer constrained purchase choices of claim 5 wherein said means for obtaining data further comprises:  
means for displaying, on said customer terminal device, said it retrieved data indicative of said customer-specific factors previously entered by said customer; and  
means for enabling said customer to edit said displayed data.
7. The on-line system for presenting customer constrained purchase choices of claim 6 wherein said means for obtaining data further comprises:  
means for storing said edited data received from said customer in a session file.
8. The on-line system for presenting customer constrained purchase choices of claim 1 wherein said means for generating said view of said goods comprises:  
means for defining at least one template representative of both said customer-specific factors relating to said customer and available inventory of said goods available for purchased by consumers.
9. A system for processing shoe inventory information, the information including information representative of shoes available for purchase, comprising:  
a database comprising size identifiers and shoe identifiers, each shoe identifier having a corresponding size identifier; and  
a processor adapted to receive a search criteria for a search, to determine if the search criteria matches at least one of the size identifiers, and to return a result for the search comprising each shoe identifier having the corresponding size identifier that matches the search criteria, said return being limited only to shoes available for purchase.

10. The system of claim 9 wherein:  
the search criteria comprises a search size;  
the size identifiers each comprise a shoe size; and  
the processor further is adapted to determine if the search size matches  
5 at least one shoe size, and to return as the result each shoe identifier having the  
corresponding size identifier with the shoe size that matches the search size.
11. The system of claim 10 wherein:  
the system further comprises a display;  
the database further comprises a plurality of shoe images, each shoe  
10 image corresponding to one of the shoe identifiers; and  
the processor further is adapted to output to the display the shoe images  
that correspond to the shoe identifiers returned as the result.
12. The system of claim 10 wherein:  
the system further comprises a display;  
15 the database further comprises a shoe text corresponding to each of the  
shoe identifiers; and  
the processor further is adapted to output to the display each of the shoe  
text corresponding to each of the shoe identifiers returned as the result.
13. The system of claim 12 wherein each shoe text comprises a description  
20 of a shoe.
14. A system for processing a search of shoe inventory information,  
including information representative of shoes available for purchase, comprising:  
an Internet connection;  
a database comprising shoe information; and  
25 a processor adapted to receive a search criteria for the search over the  
Internet connection, to determine if the search criteria matches a shoe  
information element in the shoe information, and to return a result for the search  
over the Internet link, the result being limited only to shoes available for  
purchase.

15. A system for processing a search of shoe inventory information, including information representative of shoes available for purchase, comprising:
- a database comprising shoe information;
  - an Internet connection;
  - 5 a first processor adapted to initiate the search criteria over the Internet connection; and
  - a second processor adapted to receive the search criteria for the search over the Internet connection, to determine if the search criteria matches a shoe information element in the shoe information, and to return a result for the search over the Internet connection, the result being limited only to shoes available for purchase.
- 10
16. A method for processing a search of shoe inventory information over an Internet connection, including information representative of shoes available for purchase, comprising:
- 15 providing in a database shoe information comprising a shoe information element;
  - receiving a search criteria for the search over the Internet connection;
  - determining if the search criteria matches the shoe information element in the shoe information; and
  - 20 returning a result for the search, the result being limited only to shoes available for purchase.
17. The method of claim 16 further comprising transmitting the result over the Internet connection.
18. The method of claim 16 further comprising determining that the search criteria matches the shoe information element and returning as the result a shoe identifier that corresponds to the shoe information element.
- 25
19. A method for searching shoe inventory information for electronic commerce by a user connected over an Internet connection, the information including information representative of shoes available for purchase, comprising:
- 30 a connecting a first processor to the Internet connection;

a transmitting shoe product information to the user over the Internet connection;

receiving a search criteria over the Internet connection;

5 searching the shoe inventory information with the search criteria to determine if a match exists and generating a result limited only to shoes available for purchase; and

transmitting a result for the search over the Internet connection.

20. The method of claim 19 wherein the search criteria matches a shoe in the shoe inventory information and the result identifies the shoe.

10 21. The method of claim 19 wherein the search criteria matches a plurality of shoes in the shoe inventory information and the result identifies the plurality of shoes.

22. The method of claim 19 further comprising receiving over the Internet connection an order requesting a selected shoe.

15 23. The method of claim 22 further comprising initiating a shipping process to ship the selected shoe.

24. A method for searching shoe inventory information for electronic commerce by a user connected over an Internet connection, the inventory information including information representative of shoes available for purchase, comprising:

20 connecting a first processor to the Internet connection;

transmitting shoe product information over the Internet connection;

receiving a search criteria over the Internet connection;

searching the shoe inventory information with the search criteria to determine if a match exists;

25 determining that the search criteria matches a plurality of shoes in the shoe inventory information and generating a result limited only to shoes available for purchase;

transmitting over the Internet connection a result identifying the plurality of shoes;

receiving over the Internet connection a selection identifying a selected one of the plurality of shoes; and  
initiating a shipping process to ship the selected shoe.

- 5           25.    The method of claim 24 further comprising transmitting order information over the Internet connection prior to initiating the shipping process.
26.    The method of claim 25 wherein the order information comprises pricing information for the selected shoe.
27.    The method of claim 25 wherein the order information comprises size  
10 information for the selected shoe.
28.    The method of claim 25 wherein the order information comprises product name information for the selected shoe.
29.    The method of claim 25 wherein the order information comprises quantity information for the selected shoe.
- 15           30.    The method of claim 24 further comprising transmitting account history information over the Internet connection prior to initiating the shipping process.
31.    The method of claim 24 further comprising transmitting billing address information over the Internet connection prior to initiating the shipping process.
32.    The method of claim 24 further comprising transmitting shipping  
20 address information over the Internet connection prior to initiating the shipping process.
33.    The method of claim 24 further comprising receiving payment information over the Internet connection prior to initiating the shipping process.
34.    The method of claim 33 wherein the payment information comprises credit card information.
- 25           35.    The method of claim 33 wherein the payment information comprises electronic check information.
36.    The method of claim 24 further comprising transmitting order confirmation information for the selected shoe prior to initiating the shipping process.

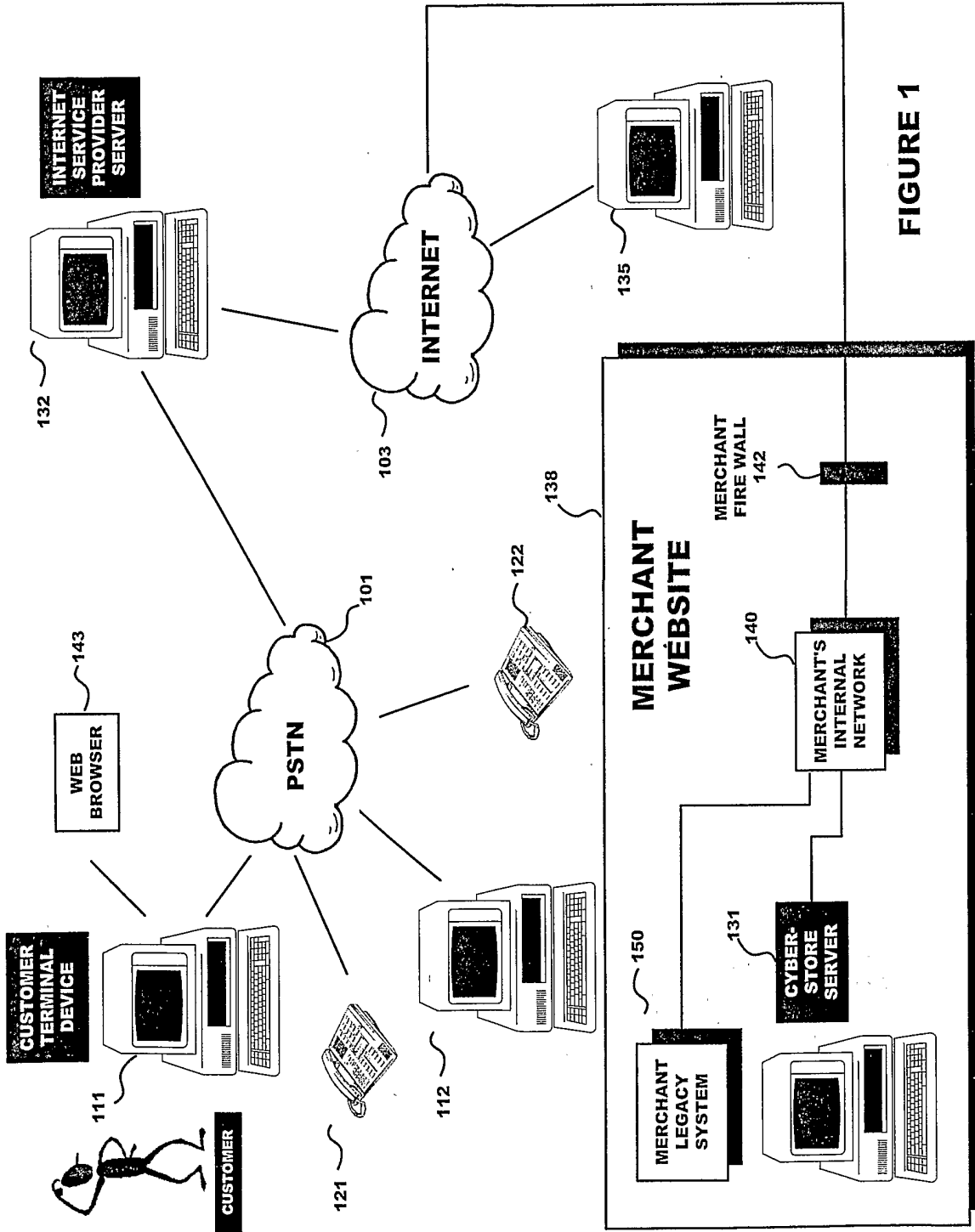
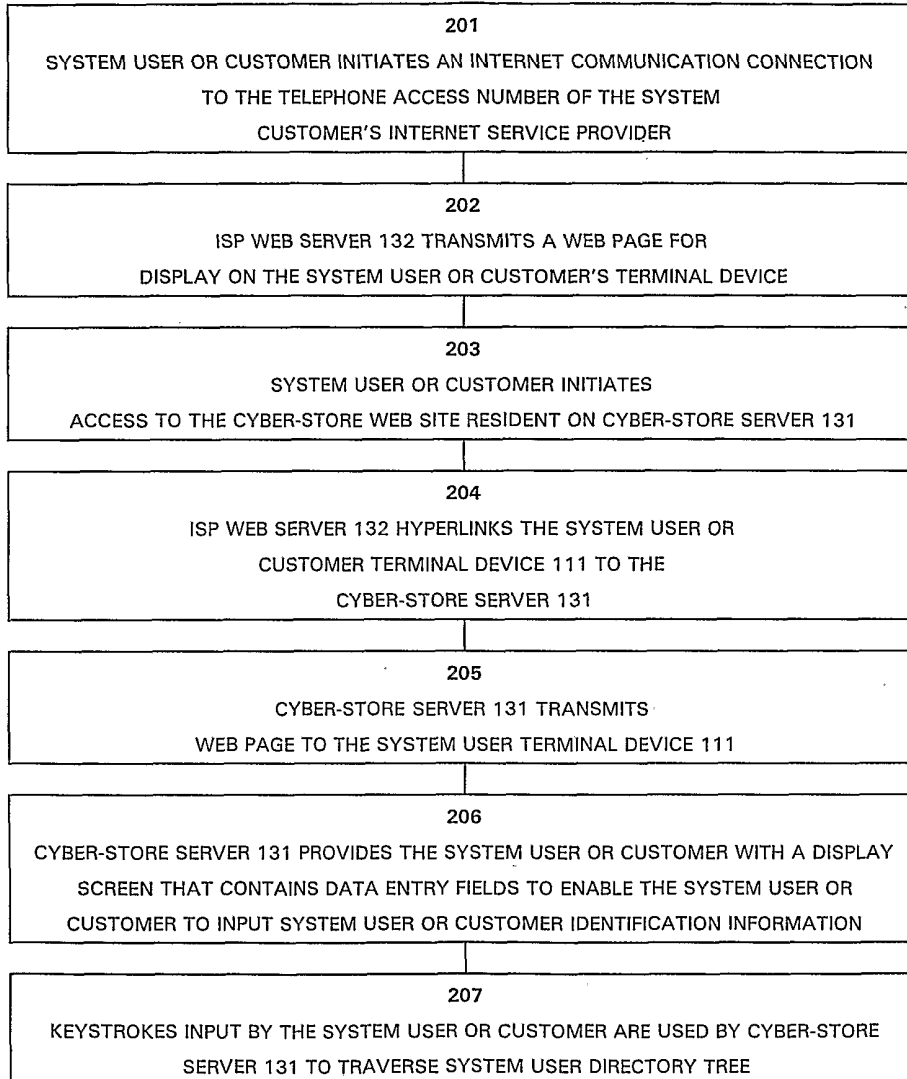


FIGURE 1

FIGURE 2



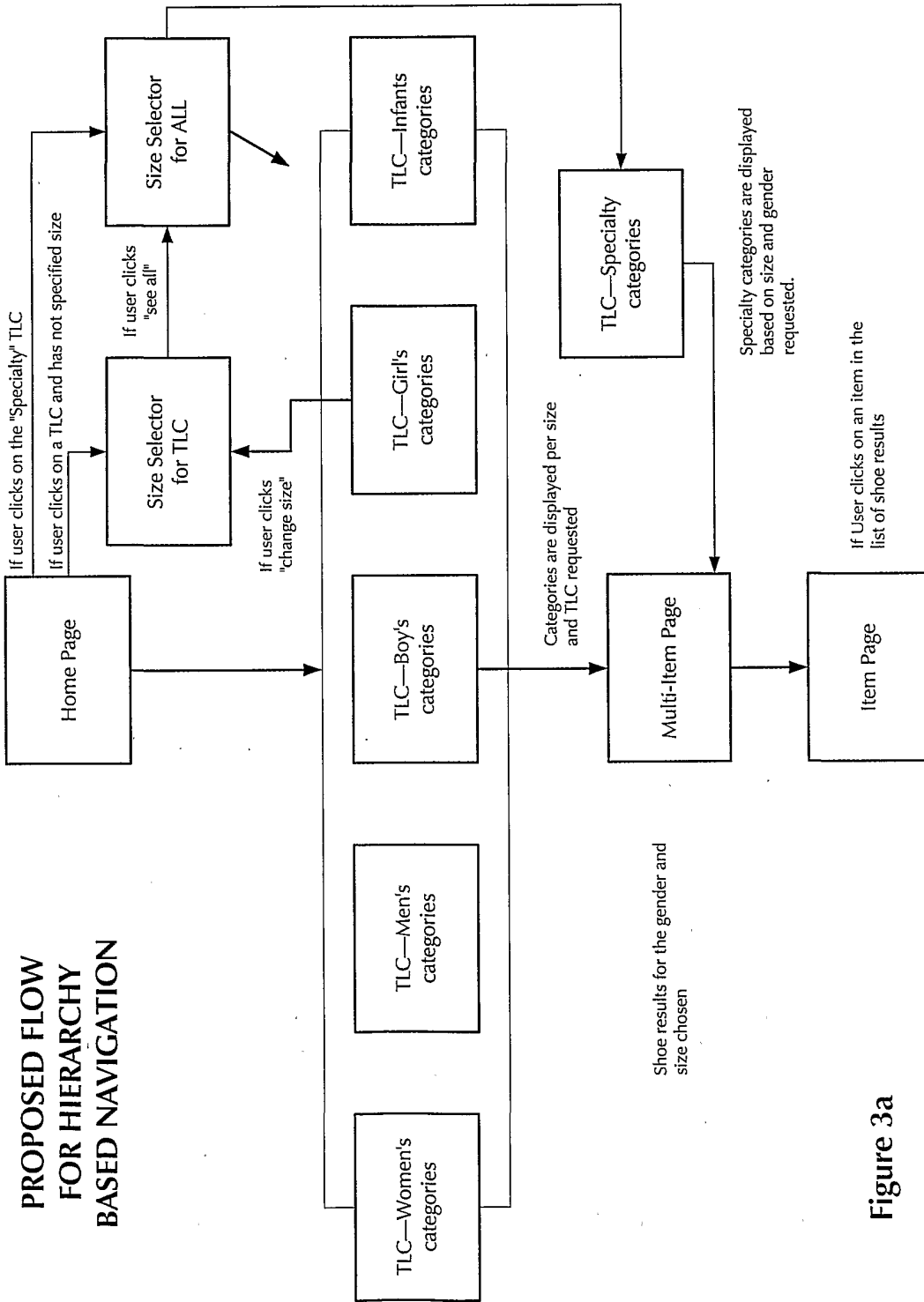


Figure 3a



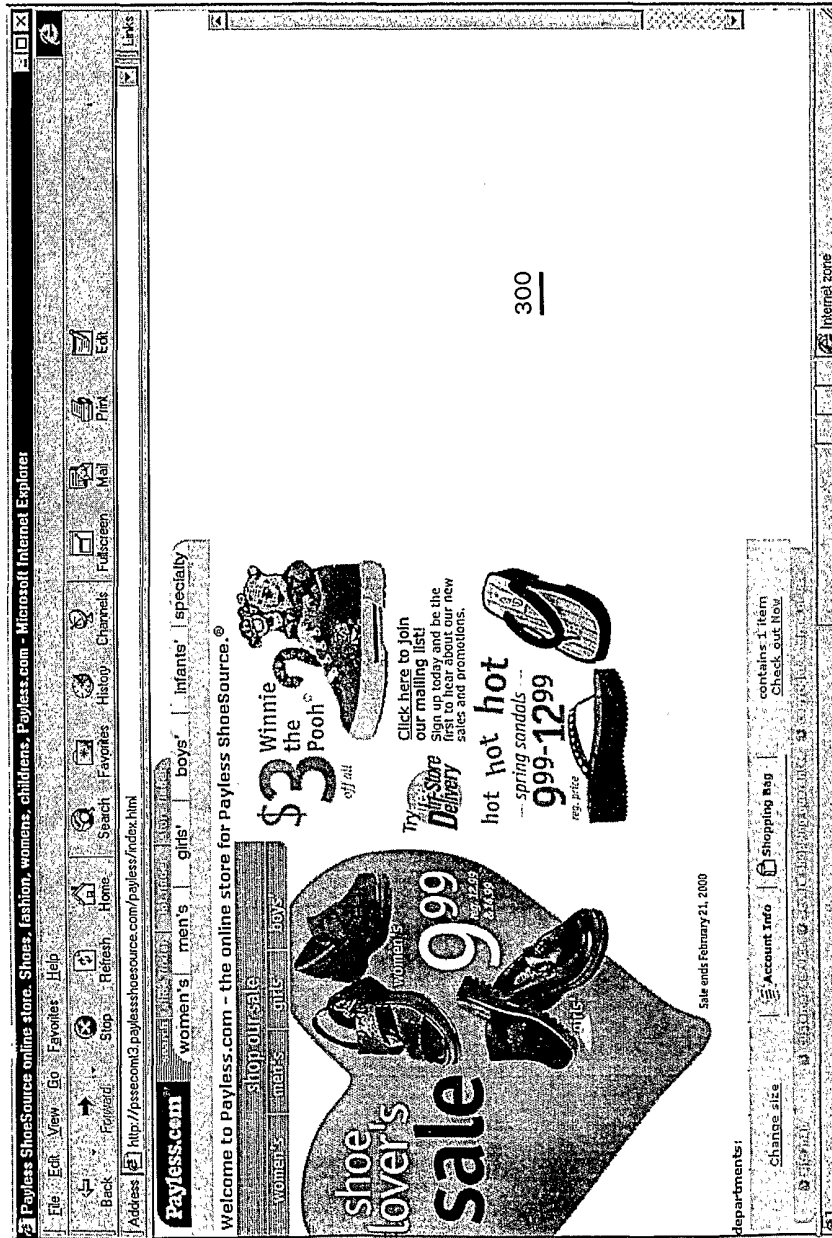
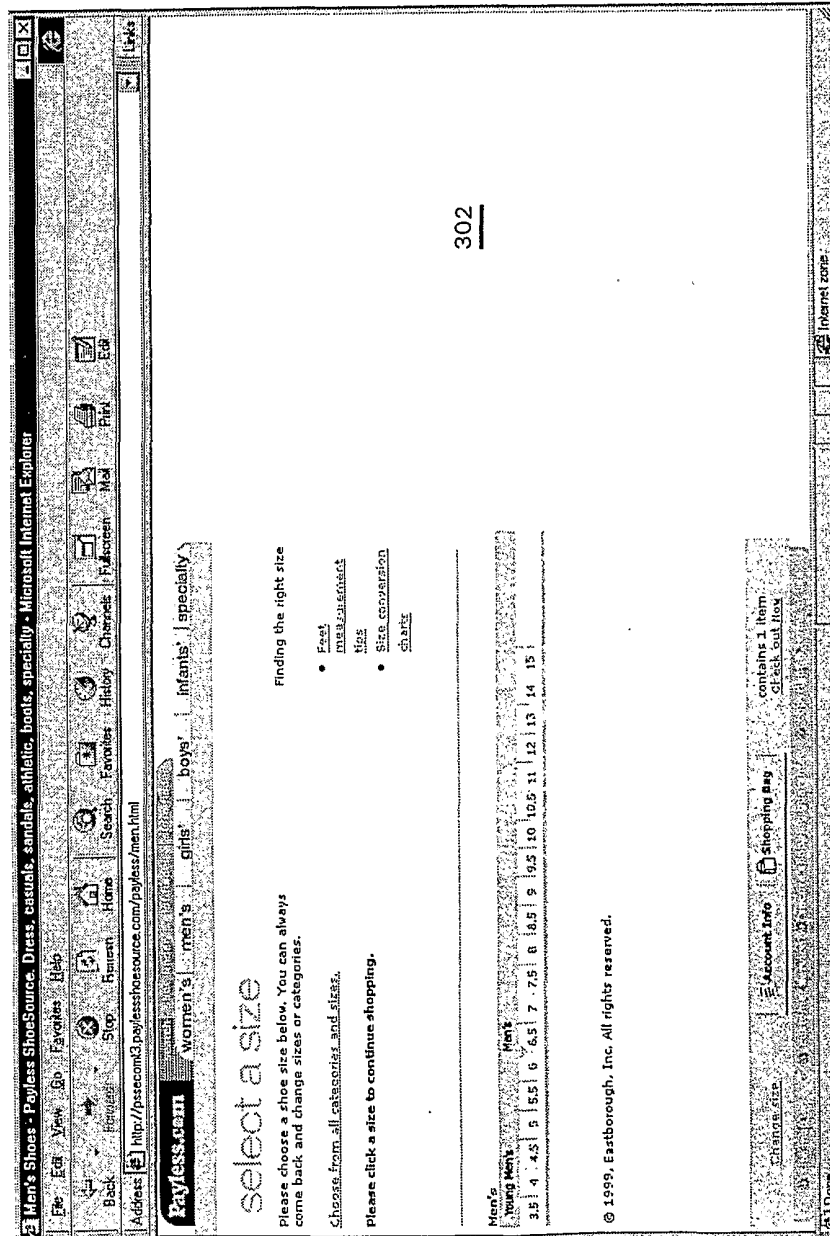
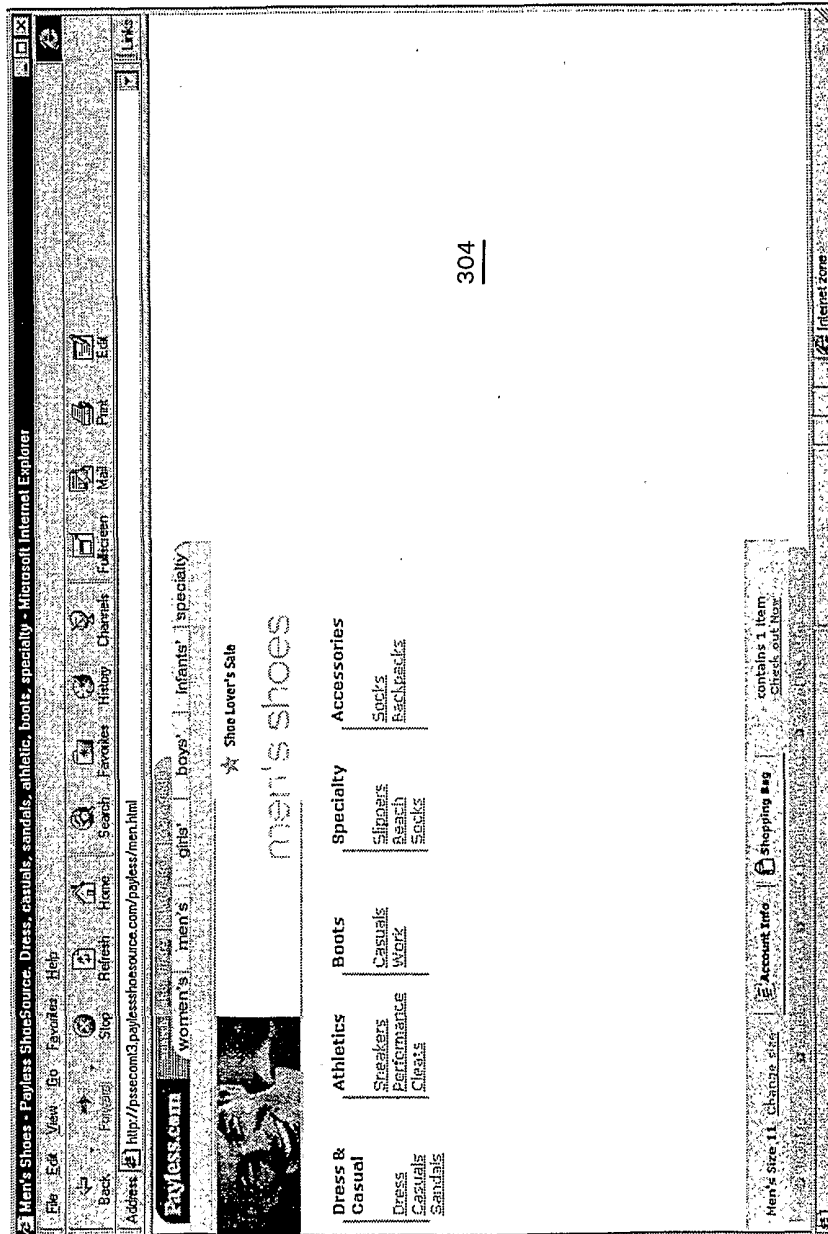


FIGURE 3b



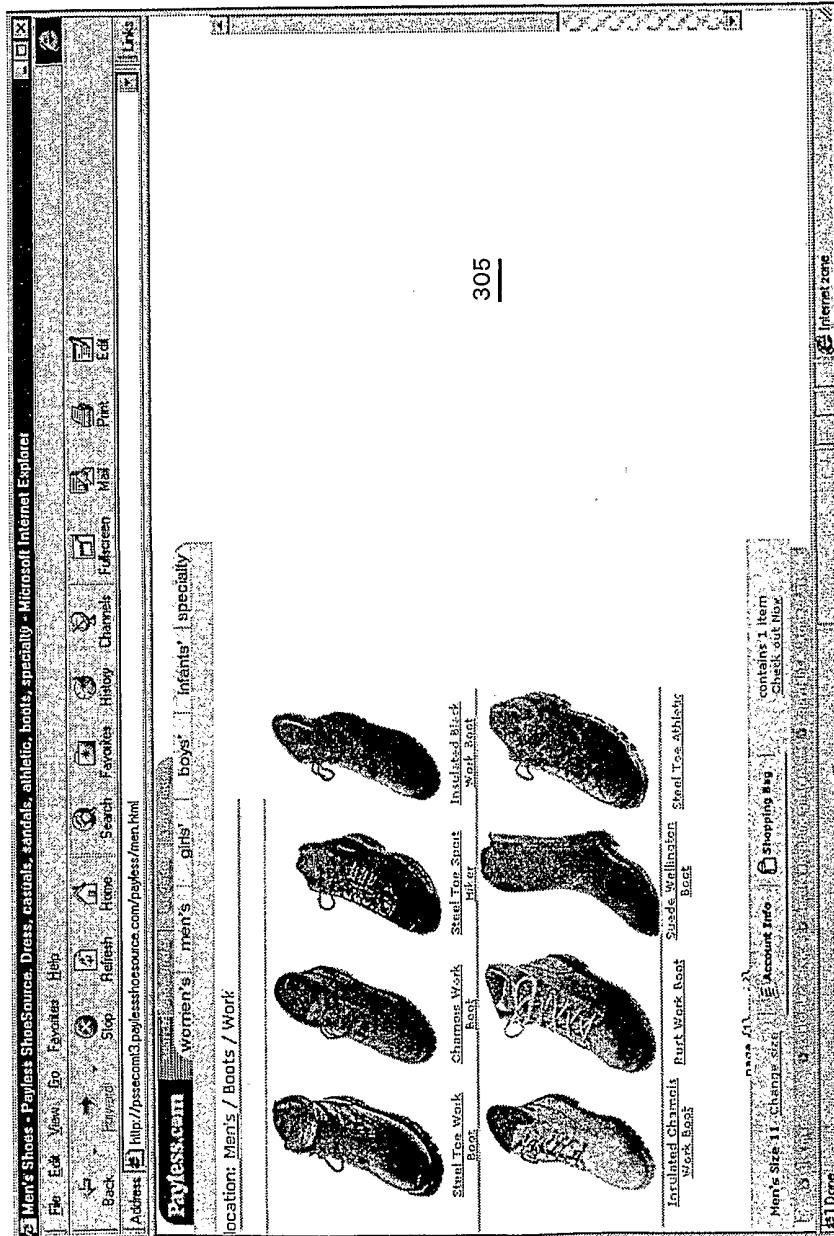
302

FIGURE 3c



304

FIGURE 3d



305

FIGURE 3e

Men's Shoes - Payless ShoeSource, Dress, casuals, sandals, athletic, boots, specialty - Microsoft Internet Explorer


Address: http://msccom3.paylessshoesource.com/payless/men.html

Payless.com women's men's gifts boys infants specially

location: Men's / Boots / Work / Steel Toe Work Boot

### Steel Toe Work Boot

[Click to view details.](#)



Tough Enough. Manmade upper has **SteelToe** laces up the front for a good fit. Padded collar adds extra comfort around the heel. Cushion System for all day comfort. Rubber sole has **Shockwave**. Welt construction is oil resistant, **LIPOKID RESISTANT** and has a steel shank for support. These colors or widths are also available for this item. Click watch to view shoe in that color or width.

Size: 11 Regular  
Color: Black  
Lot Number: 813  
Price: \$29.99

Quantity:  [add to shopping bag](#)

Regular Widths  Wide Widths

Show all available sizes. [Last measurement link](#)  
Size conversion chart

Men's Size 11. Change size [Account Info](#) [shopping bag](#) contains 1 item [Check out Now](#)

Done Internet zone

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FIGURE 3f

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Men's Shoes - Payless Shoesource. Dress, casuals, sandals, athletic, boots, specialty. Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Favorites Edit


Address http://pscom3.paylessshoesource.com/payless/men.html

Payless.com women's men's gifts boys infants specialty

location: Men's / Boots / Work / Steel Toe Work Boot

### Steel Toe Work Boot

[Click to view details.](#)



**Size:** 11 Regular  
**Color:** Black  
**Lot Number:** 819  
**Price:** \$29.99

Tough Enough. Manmade upper has **Steel Toe**, laces up the front for a good fit, padded collar adds extra comfort around the heel, **Perforated Air Cushion** system for all day comfort. Rubber sole has **Shockwear**. Walk construction is oil **RESISTANT**, **LINKSKID RESISTANT** and has a **steel shank** for support. These colors or widths are also available for this item. Click **switch** to view shoes in that color or width.

Regular Widths   
 Wide Widths

Show all available sizes.

Fast measurement tips  
 Size estimation guide

added to shopping bag

contains 2 items  
 Check out box

Men's Size 11 Casusa Rich Account Info Shopping Bag

Internet Zone

FIGURE 3g

10/20

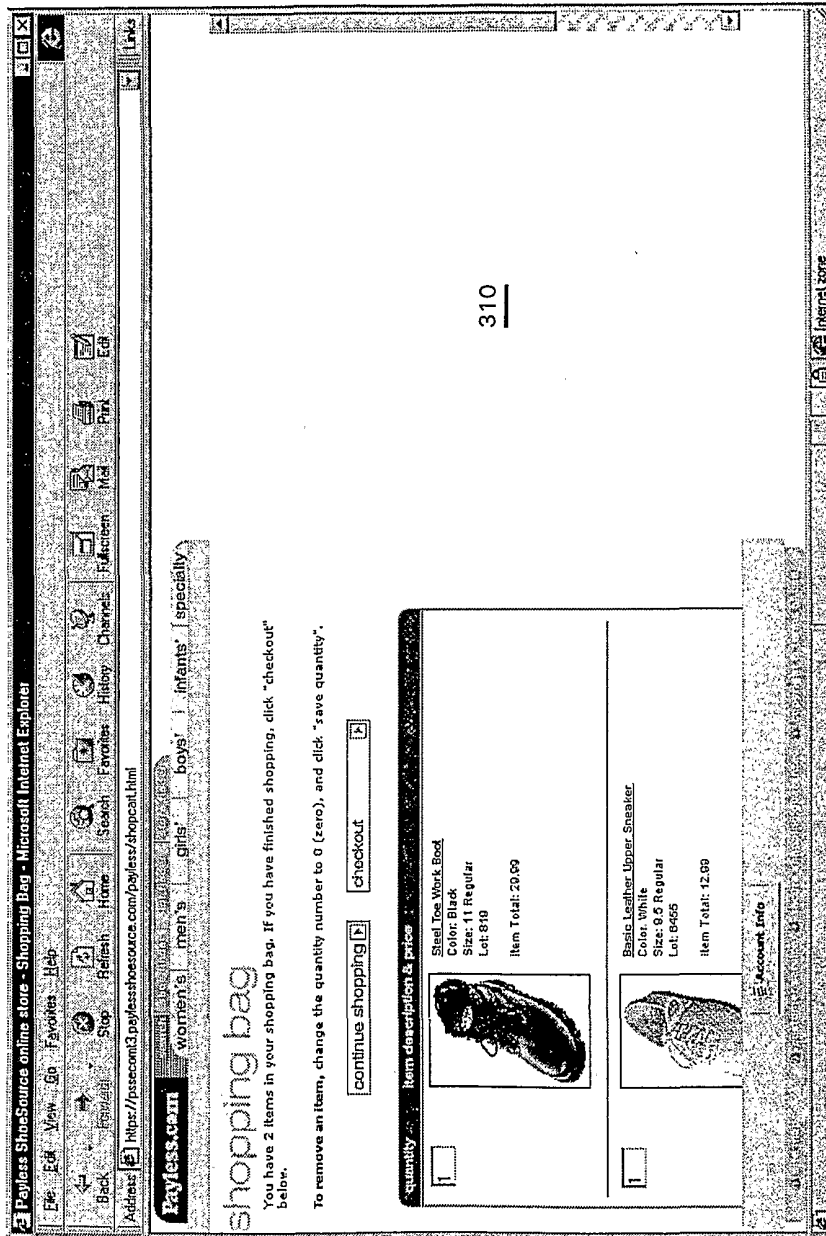
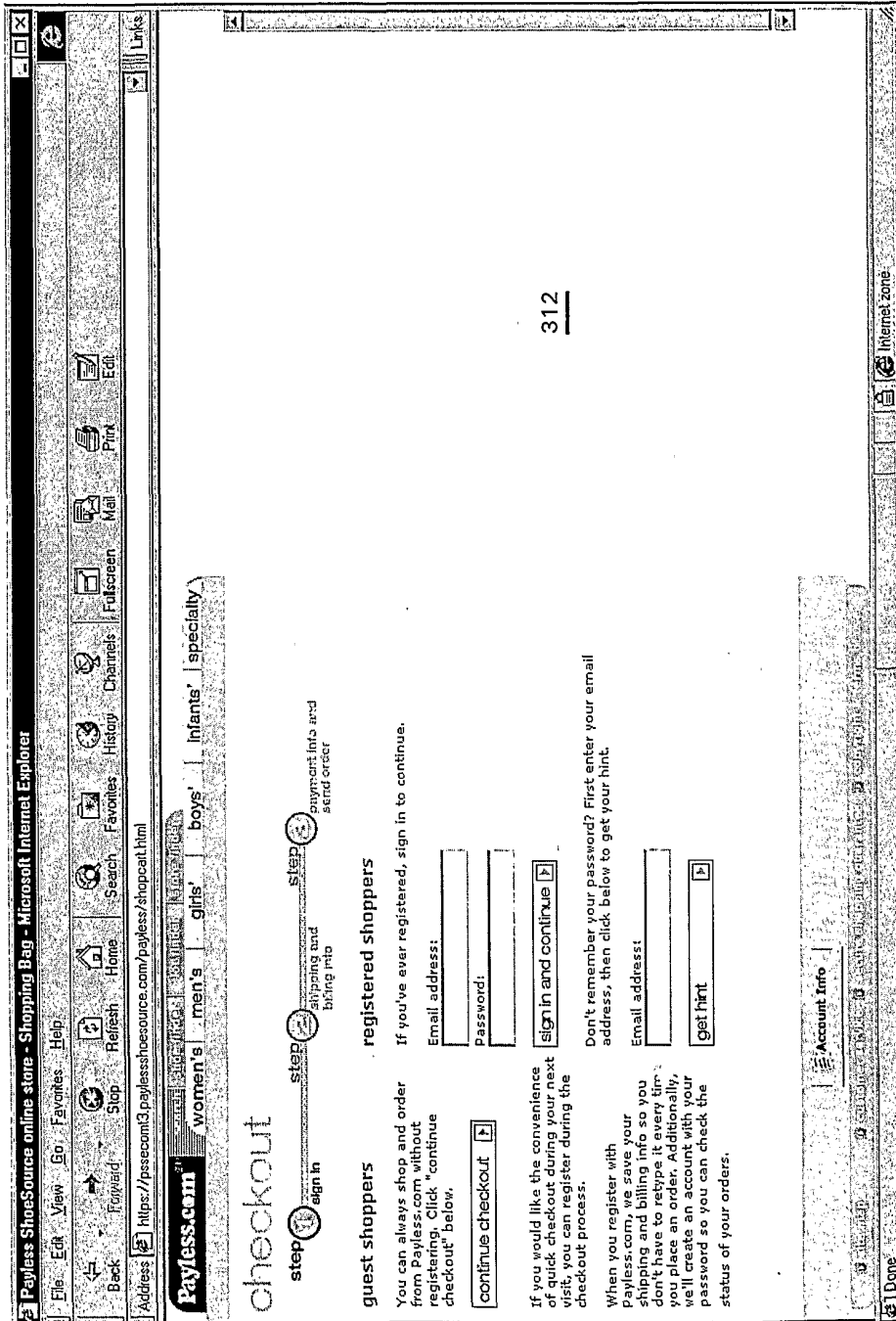


FIGURE 3h

11/20

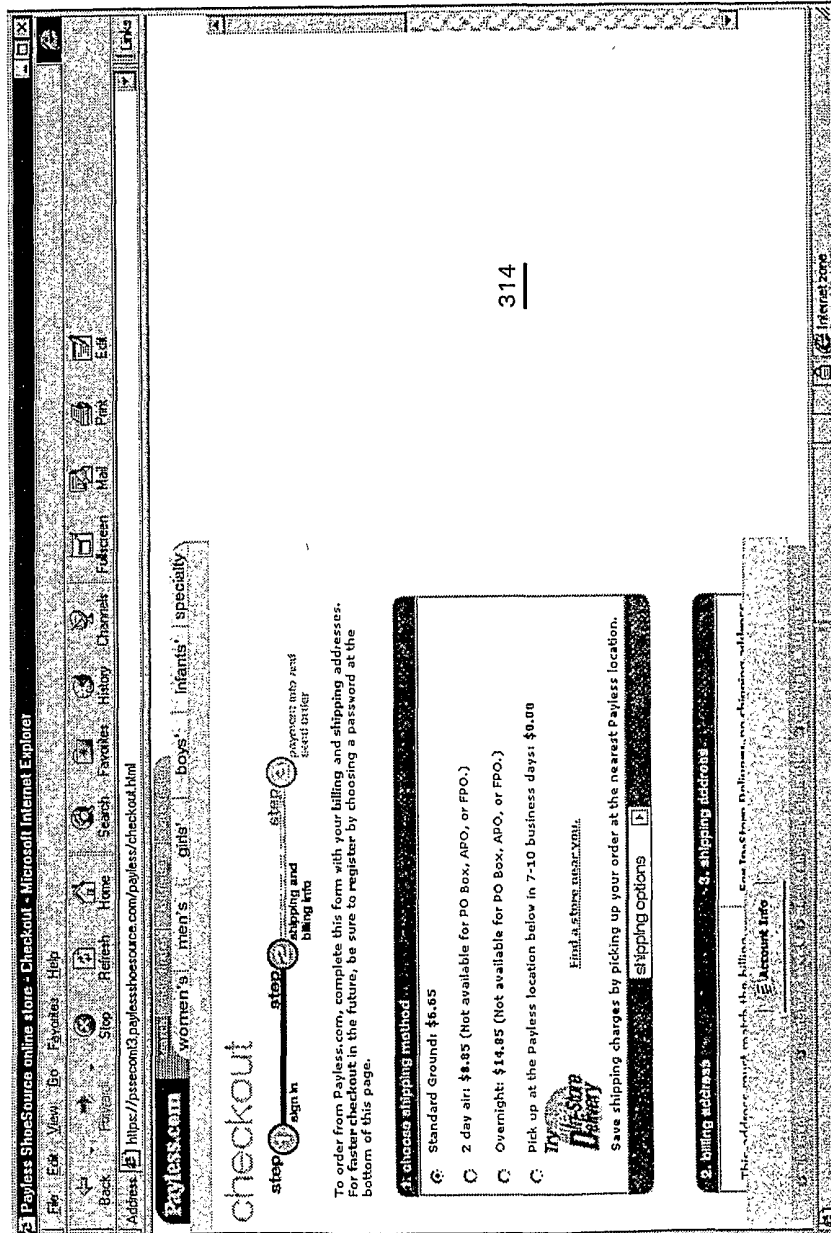


312

FIGURE 3i

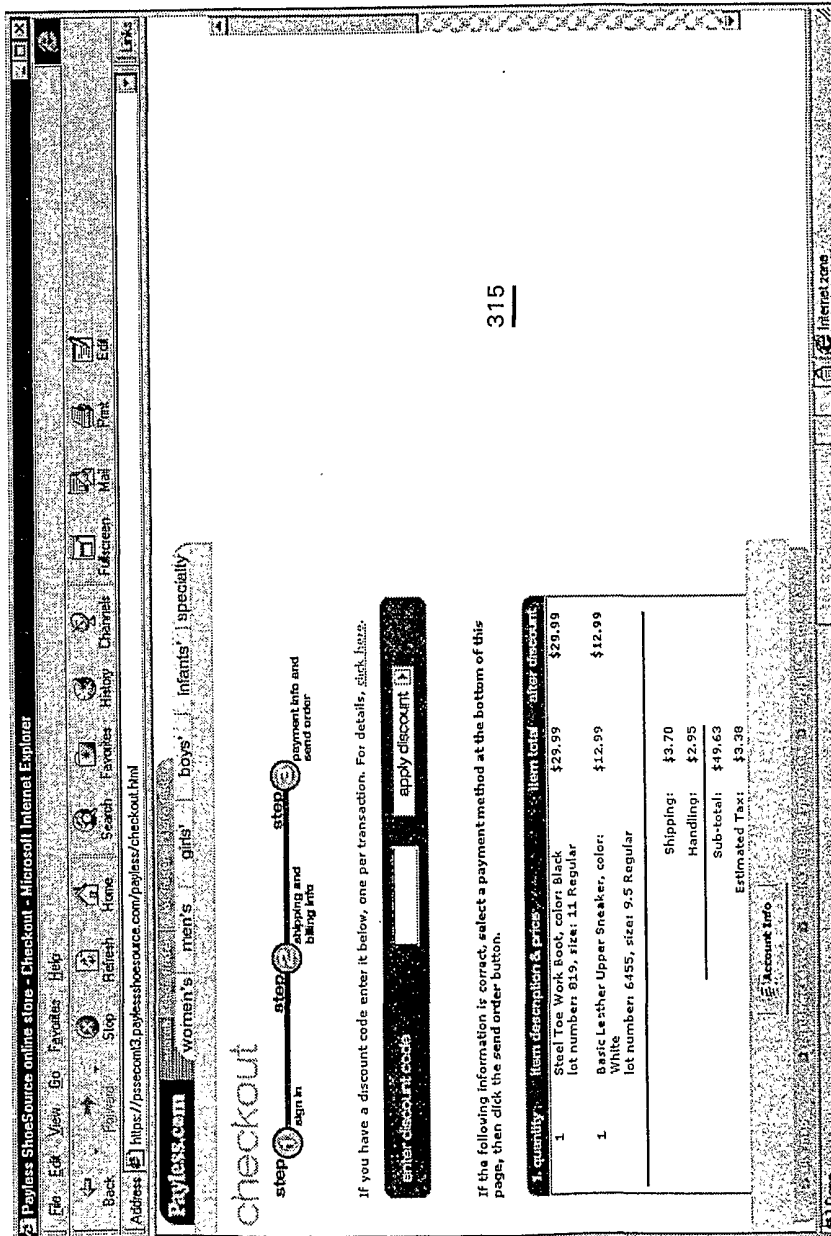


12/20



314

FIGURE 3j



315

FIGURE 3K

Payless ShoesSource online store - Checkout - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Favorites Mail Print Edit

Address <http://psecom3.paylessshoesource.com/payless/checkout.html>

**Payless.com** women's men's girls' boys' infants' specialty

# checkout

Thanks for shopping at Payless.com. Styles and promotions change often, so be sure to shop us again soon.

We've listed important information about your account below. We recommend you print this page for your records.

Your order number: 5000137596545  
 Anticipated ship date: 05/24/2000  
 Ship method: Standard Ground

We will send you a confirmation e-mail with additional details about your order.

quantity	Item description	Item total	after discount
1	Steel Toe Work Boot, color Black, lot number: 815, size: 11 Regular	\$29.99	\$21.99
1	Basic Leather Upper Sneaker, color: White, lot number: 6455, size: 9.5 Regular	\$12.99	\$12.99
Shipping:		\$3.70	
Handling:		\$2.95	
Sub-total:		\$49.63	
Estimated Tax:		\$3.38	
Estimated Total:		\$59.01	

Account Info

FIGURE 31

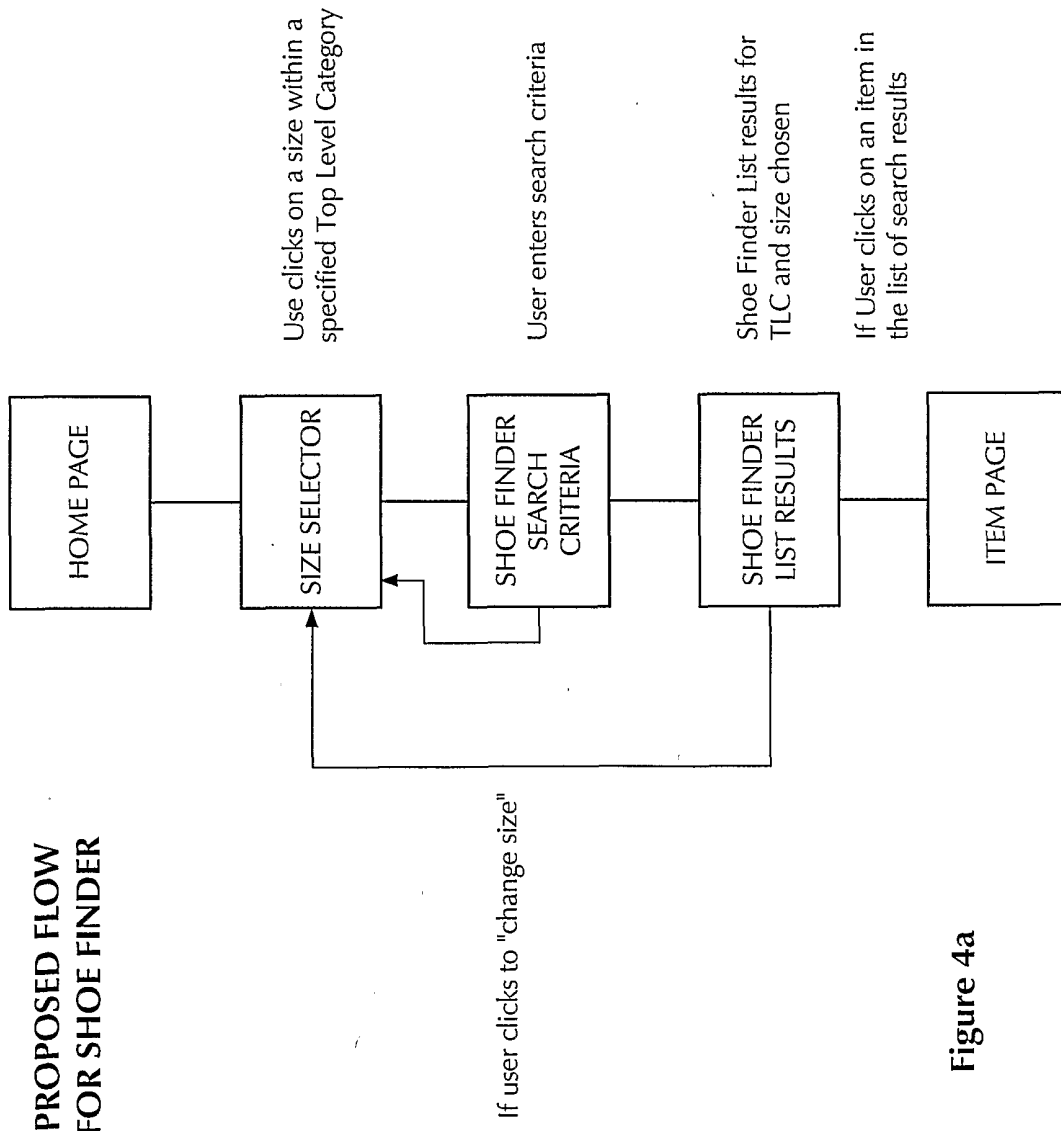


Figure 4a

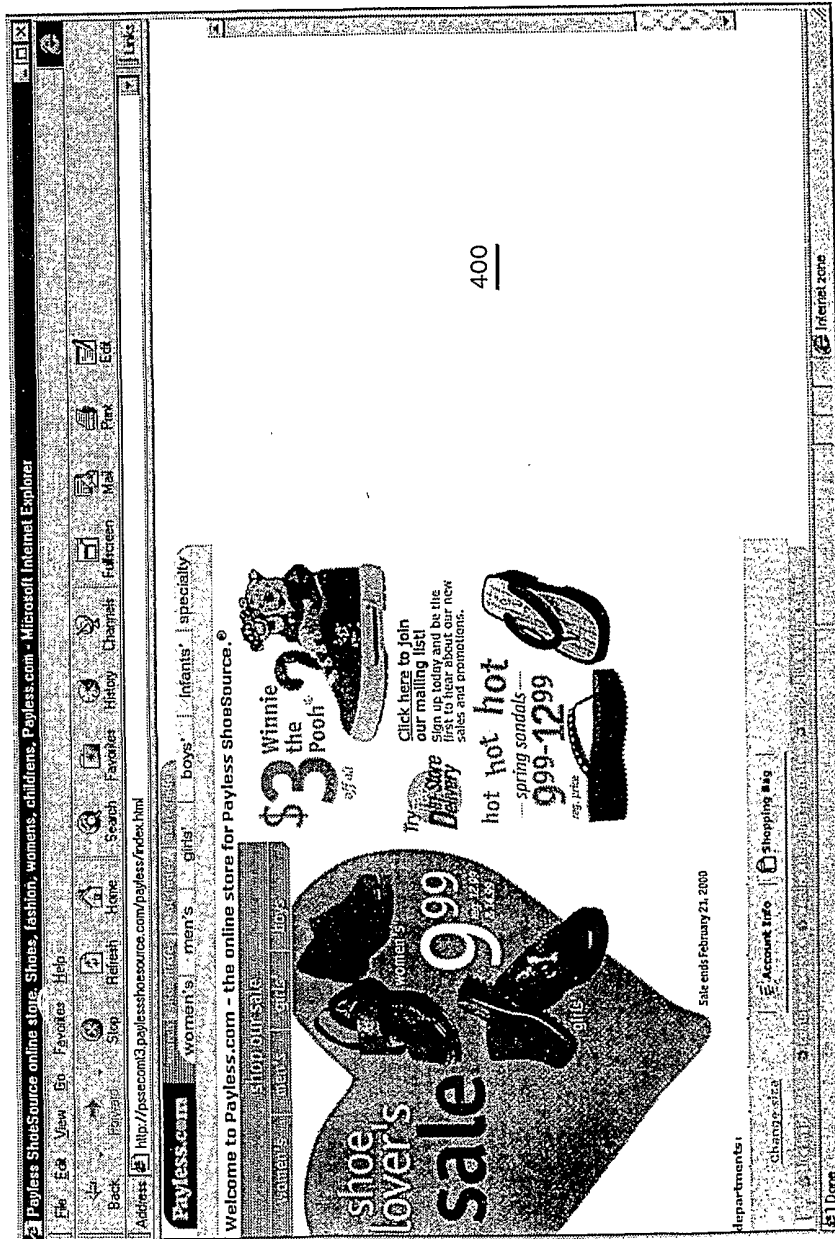


FIGURE 4b

The screenshot shows a web browser window titled "Payless ShoeSource online store - Shoe Finder - Microsoft Internet Explorer". The address bar contains the URL "http://pss.com/payless/resources/shoe\_finder.html". The browser's menu bar includes File, Edit, View, Go, Favorites, Help. The toolbar contains Back, Forward, Stop, Refresh, Home, Search, Favorites, History, Channels, Favorites, Mail, Print, Edit, and Links. The main content area features a "shoe finder" section with a navigation menu for "women's", "men's", "girls'", "boys'", "infants'", and "specialty". Below the menu is a text prompt: "Please select your shoe size from those listed below. Shopping this way insures you find the shoes available in the size you need, making your shopping fast and enjoyable." followed by "Please click a size to continue".

The size selection options are organized into four categories:

- Women's**: 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 11 | 12 | 13
- Men's**:
  - Young Men's: 3.5 | 4 | 4.5 | 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 10.5 | 11 | 12 | 13 | 14 | 15
  - Men's: 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 10.5 | 11 | 12 | 13 | 14 | 15
- Girls'**:
  - Toddlers: 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 10.5 | 11 | 11.5 | 12 | 12.5 | 13 | 13.5 | 14 | 15
  - Girls: 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 10.5 | 11 | 11.5 | 12 | 12.5 | 13 | 13.5 | 14 | 15
- Boys'**:
  - Toddlers: 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 10.5 | 11 | 11.5 | 12 | 12.5 | 13 | 13.5 | 14 | 15
  - Boys: 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 | 10.5 | 11 | 11.5 | 12 | 12.5 | 13 | 13.5 | 14 | 15

At the bottom right, there are links for "Change Size", "Account Info", and "Shopping Bag". The browser status bar at the bottom shows "Done" and "Internet zone".

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FIGURE 4c

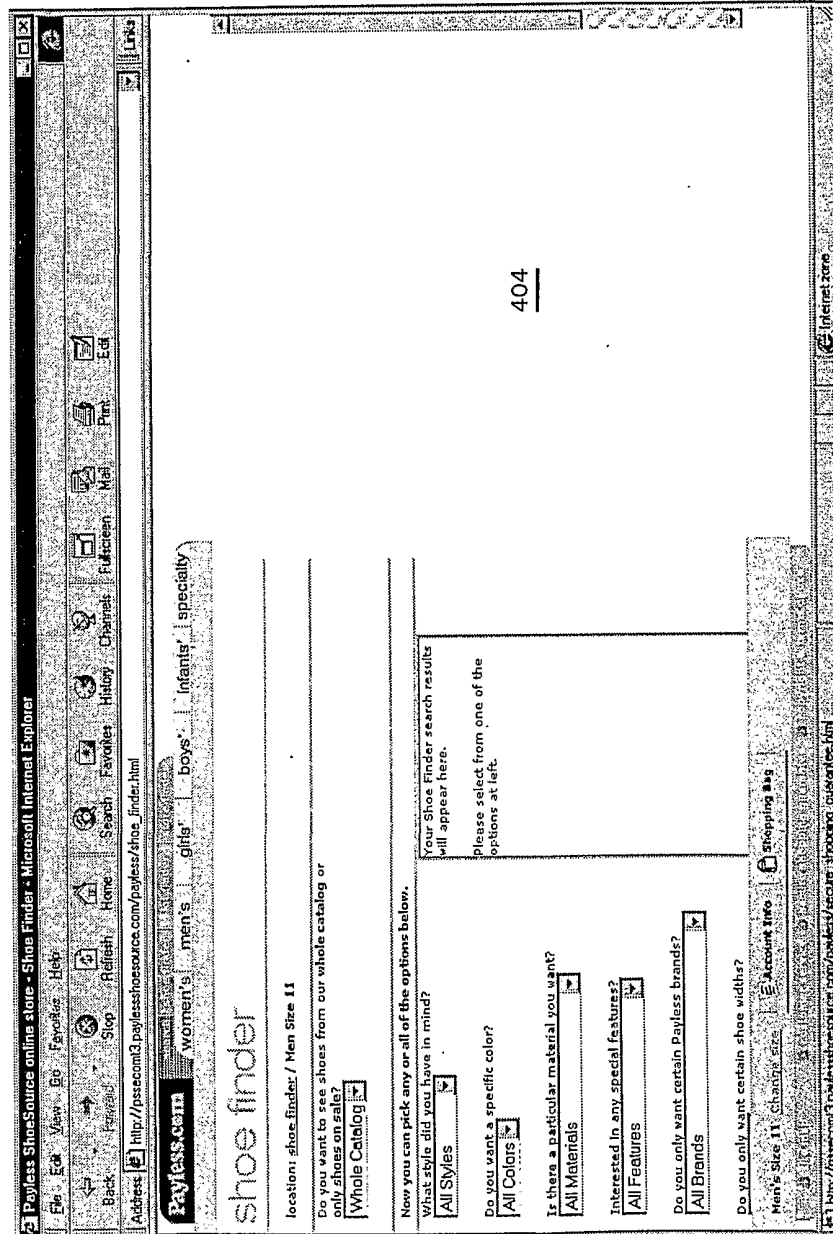


FIGURE 4d

Payless ShoeSource online store - Shoe Finder - Microsoft Internet Explorer

File Edit View Go Favorites Help  
Back Forward Stop Refresh Home Search Favorites History Channels Favorites Mail Print Edit

Address [http://psecam3.paylessources.com/payless/shoe\\_finder.html](http://psecam3.paylessources.com/payless/shoe_finder.html)

**Payless.com** | women's | men's | girls' | boys' | infants' | specialty

# shoe finder

location: [shoe finder](#) / [Men Size 11](#)

Do you want to see shoes from our whole catalog or only shoes on sale?

Now you can pick any or all of the options below.

What style did you have in mind?

Do you want a specific color?

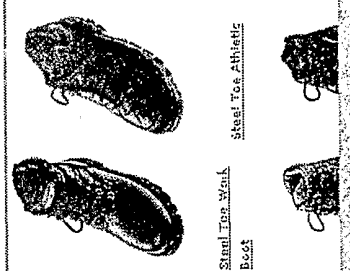
Is there a particular material you want?

Interested in any special features?

Do you only want certain Payless brands?

Do you only want certain shoe widths?

406



Small Top, Men's Boots  
Small Top, Athletic Boots  
Steel Toe, Athletic Boots  
Steel Toe, Men's Boots

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FIGURE 4e



Progress ShoeSource online store - Shoe Finder - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Charms Fullscreen Print Exit


Address http://psrscm013.paylessresource.com/payless/shoe\_finder.html

Payless.com women's men's girls boys infants specialty

location: Shoe Finder Result / Steel Toe Work Boot

### Steel Toe Work Boot

[click to view details.](#)



Tough Enough. Manmade upper for steel toe. Padded collar adds extra comfort around the heel. Insole has the Eschivo™ Air Cushion System for all day comfort. Rubber sole has Sockwear. Well construction is all REFRESH™, LIQUID RESISTANT and has a steel shank for

Size: 11, Regular  
Color: Black  
Lot Number: 819  
Price: \$29.99

Quantity:

[add to shopping bag](#)

Regular Widths   
Wide Widths

show all available sizes.

add information  
size conversion chart

Men's Size 11, Change size  
Account info Shopping bag

Internet zone

FIGURE 4f

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INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US01/17127

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) :G 06 F 17/60  
US CL : 705/27

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/27

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

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

East, West, Proquest Direct

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,058,417 A (HESS et al) 02 May 2000, abstract. fig. 2,3,6. col. 2, lines 10-27.	1-8
Y	US 6,016,504 A (ARNOLD et al) 18 January 2000, abstract. fig.1. col. 4, lines 1-33.	1-36
Y	US 5,966,697 A (FERGERSON et al) 12 October 1999, fig. 1, abstract. col. 2, lines 25-57.	1-36
Y	US 5,983, 201 A (FAY) 09 November 1999, fig. 1. col. 2, lines 50-60. col. 3, lines 14-33.	1-36
A	US 6,026,376 A (KENNEY) 15 February 2000, fig. 1. col. 4, lines 20-60.	1-36

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 24 JUNE 2001	Date of mailing of the international search report 01 AUG 2001
---------------------------------------------------------------------------	-------------------------------------------------------------------

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer VINCENT MILLIN <i>James R. Matthews</i> Telephone No. (703) 308-1065
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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US01/17127

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,055,513 A (KATZ et al) 25 April 2000, fig. 3. col. 8, lines 33-63.	1-36