

## Chapter 4

### -- Anatomy of a Patent --

In this chapter, we will explore the sections of a typical U.S. patent and discuss the content and purpose of each. In this discussion, we will use U.S. Patent No. 5,960,411 as an example. A complete copy of the patent is provided as an appendix to this chapter. Interestingly enough, many people have never seen an actual patent.

U.S. Patent No. 5,960,411 is owned by Amazon.com. As is common knowledge, Amazon.com is an on-line retailer or e-tailer that sells a wide variety of products. Customers surf the Amazon.com web-site to see pictures and descriptions of the items for sale. The customer can then place an order through the web-site and have the purchased goods shipped to him or her.

Traditionally, as items are selected for purchase, they are placed in an electronic “shopping cart.” The shopping cart is merely an electronic list of the items the customer has selected for purchase. When the customer is finished, the transaction is completed by having the customer input credit card information to the web-site. The credit card is then charged for the total sales price of the items purchased, plus shipping and handling. Each time the customer places an order, the credit card information is re-entered or, at least, reviewed.

U.S. Patent No. 5,960,411 covers an alleged improvement on this traditional model. This patent, commonly referred to as the “one-click” patent, eliminates the electronic shopping cart. Rather, the customer initially sets up an account, including providing credit card information and an address to which purchased items are to be shipped. Thereafter, if the customer wishes to purchase an item, the customer can select that item, e.g., click on the item or a designated button, and the item is automatically ordered and shipped. There is no check-out, no electronic shopping cart, etc. One-click and the desired item is on its way to your door.

After this patent was issued, BarnesandNoble.com, another web-site selling books and other items, began offering a similar one-click ordering feature. Amazon.com brought suit for patent infringement. The court hearing the case enjoined BarnesandNoble.com from offering their one-click ordering feature during a lucrative holiday shopping season. Thus, Amazon’s patent provided an important competitive advantage.

It is interesting to note the simplicity of the invention covered by the 5,960,411 patent, the use of a single click to place an on-line order for an item. This demonstrates that virtually any idea can be the subject of a patent application and, if the idea is valuable, the patent will be also. This is true regardless of the simplicity of the new idea.

Turning to the 5,960,411 patent as an example, we will examine the various components of a typical patent and the content and purpose of each. A patent application

contains much of the same text and the same drawings as an issued patent. When a patent is issued, it is, for the most part, merely a publication of the underlying patent application.

US005960411A

**United States Patent** [19] [11] **Patent Number:** **5,960,411**

**Hartman et al.** [45] **Date of Patent:** **Sep. 28, 1999**

[54] **METHOD AND SYSTEM FOR PLACING A PURCHASE ORDER VIA A COMMUNICATIONS NETWORK**

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[73] Assignee: **Amazon.com, Inc.**, Seattle, Wash.

[21] Appl. No.: **08/928,951**

[22] Filed: **Sep. 12, 1997**

[51] Int. Cl.<sup>6</sup> ..... **G06F 17/60**

[52] U.S. Cl. .... **705/26; 705/27; 345/962**

[58] **Field of Search** ..... 705/26, 27; 380/24, 380/25; 235/2, 375, 378, 381; 395/188.01; 345/962

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[57] **ABSTRACT**

A method and system for placing an order to purchase an item via the Internet. The order is placed by a purchaser at a client system and received by a server system. The server system receives purchaser information including identification of the purchaser, payment information, and shipment information from the client system. The server system then assigns a client identifier to the client system and associates the assigned client identifier with the received purchaser information. The server system sends to the client system the assigned client identifier and an HTML document identifying the item and including an order button. The client system receives and stores the assigned client identifier and receives and displays the HTML document. In response to the selection of the order button, the client system sends to the server system a request to purchase the identified item. The server system receives the request and combines the purchaser information associated with the client identifier of the client system to generate an order to purchase the item in accordance with the billing and shipment information whereby the purchaser effects the ordering of the product by selection of the order button.

26 Claims, 11 Drawing Sheets

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graph TD
    200[Web browser/Client system] --> 210[Retrieve client ID]
    210 --> 220[Submit purchase request]
    220 --> 230[Set up transaction using purchase information]
    230 --> 240[Return confirmation message]
    240 --> 250[Done]
  
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The front page of a patent (pictured above) contains a wealth of information about the patent. The front page is not part of the underlying patent application, but is generated by the patent office at the time a patent is issued.

The front page of a patent gives the patent number (1) and the date the patent issued (2). The front page also lists the title of the invention (3) and the inventors (4). Any number of people can be listed as the inventors on a patent, provided that each meets the legal requirements, which we will discuss in a later chapter.

The assignee (5) is a party, other than the inventors, that had acquired rights to, or ownership of the patent at the time it issued. Often, the assignee is the employer of the inventor or inventors.

The front page of the patent will also list “References Cited” (6). These are patents or other publications (i.e., prior art) that were considered relevant to the patentability of the invention. The cited references may have been discovered by the patent examiner during examination of the underlying patent application. The cited references may also have been provided by the applicant. In either case, the cited references have been considered by the patent examiner and found insufficient to prevent issuance of the patent.

The patent examiner (7) who examined the underlying patent application is also listed on the front page. Often an application is examined by an assistant examiner under the direction of a more senior “primary” examiner.

The legal representative (8) that assisted the inventors in obtaining the patent application may also be listed on the front page of the patent. The legal representative may be a registered patent attorney, patent agent or law firm.

An abstract (9) of the invention is also included on the front page of the patent application. The abstract is supposed to summarize the invention covered by the patent. The abstract does not necessarily summarize all the subject matter that may be discussed in the patent.

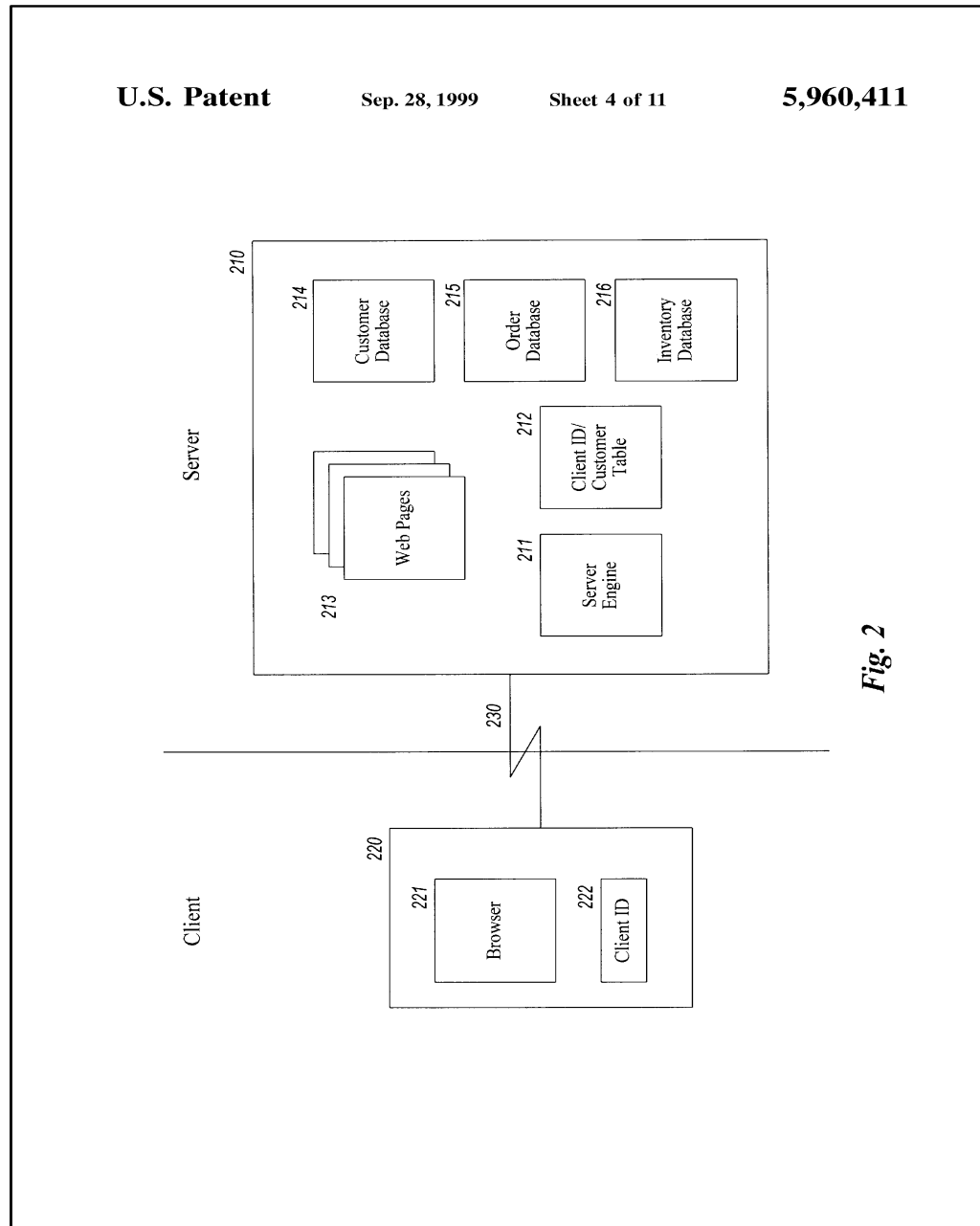
Finally, one of the figures (0) of the patent is miniaturized and printed on the front page of the patent. The figure on the front of the patent should be the figure that best represents the invention. Together, the figure and the abstract are intended to allow a patent examiner or other person to quickly assess what is covered by the patent.

Following the front page are the figures or drawings of the patent. Not all patents include figures, but most do. A patent is to include figures if figures will assist in understanding the subject matter of the patent. Some patents on chemical compounds, for example, do not include figures.

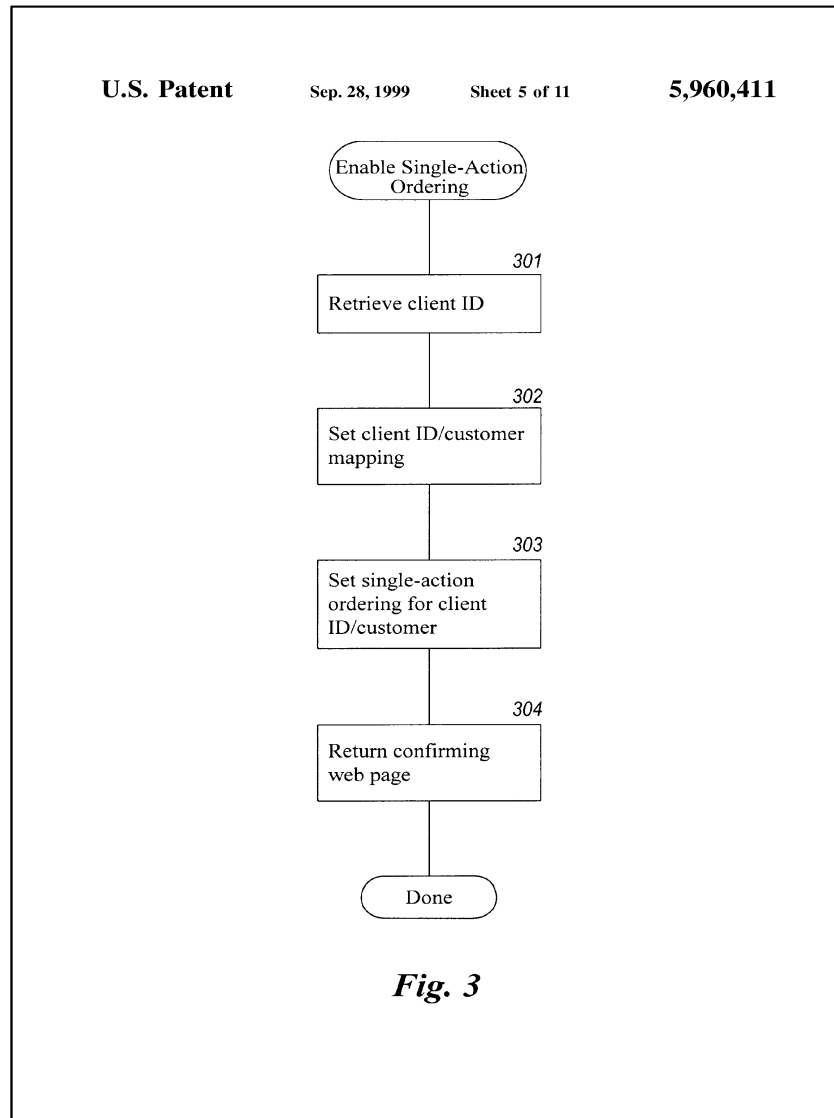
The requirements for patent drawings are very liberal. For example, a patent figure does not have to be drawn to scale. The drawings can be rendered in any manner and contain any information that assists the reader to understand the subject matter of the patent.

The various elements in each figure are typically marked with a reference number. These numbers will be used in the text of the application as the subject matter of the figure is discussed. This helps the reader of the text more quickly make sense of the figures and use the figure to understand the patent text.

There may be a number of different types of drawings in a single patent application. For example, the 5,960,411 patent includes conceptual drawings (e.g., Figs. 1a-1c), block diagrams (e.g., Fig. 2) and flow charts (e.g., Fig. 3).



Note that reference numbers are used in all kinds of drawings to provide a means of specifying the element of a figure being discussed in the patent text.

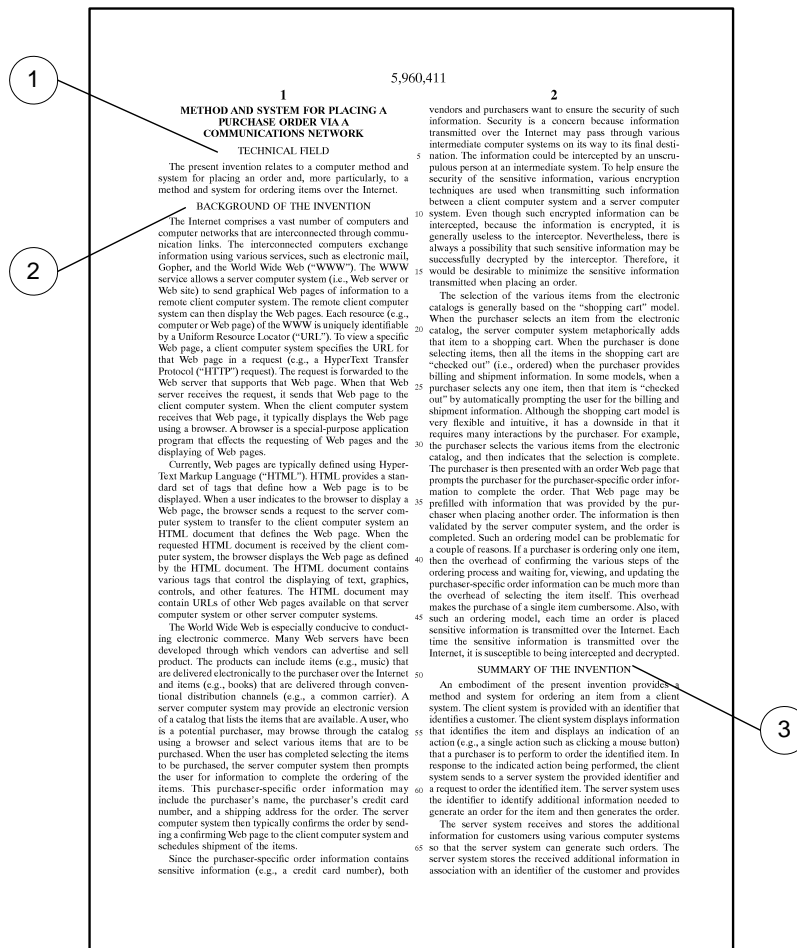


The text of the patent follows the figures. The text is broken into several sections, which we will discuss. The purpose of the text, in combination with the drawings, is to provide enough information that the average person who works in the field to which the invention pertains can duplicate the invention using the patent as a guide plus any relevant prior art.

The text typically begins with the title of the invention and then a statement of the field (1) to which the patent pertains. During examination, patent applications are allocated to patent examiners with experience in that technology. Thus, a statement of the technical field to which the patent application pertains assists the Patent Office in classifying the application.

Next comes a “Background of the Invention” (2). This section provides context for the invention and, perhaps, describes the problem that the invention was created to solve. The Background is also a helpful place to provide a lay reader with a grasp of the importance of the invention. After all, patents are enforced by judges and juries who typically have no technical training.

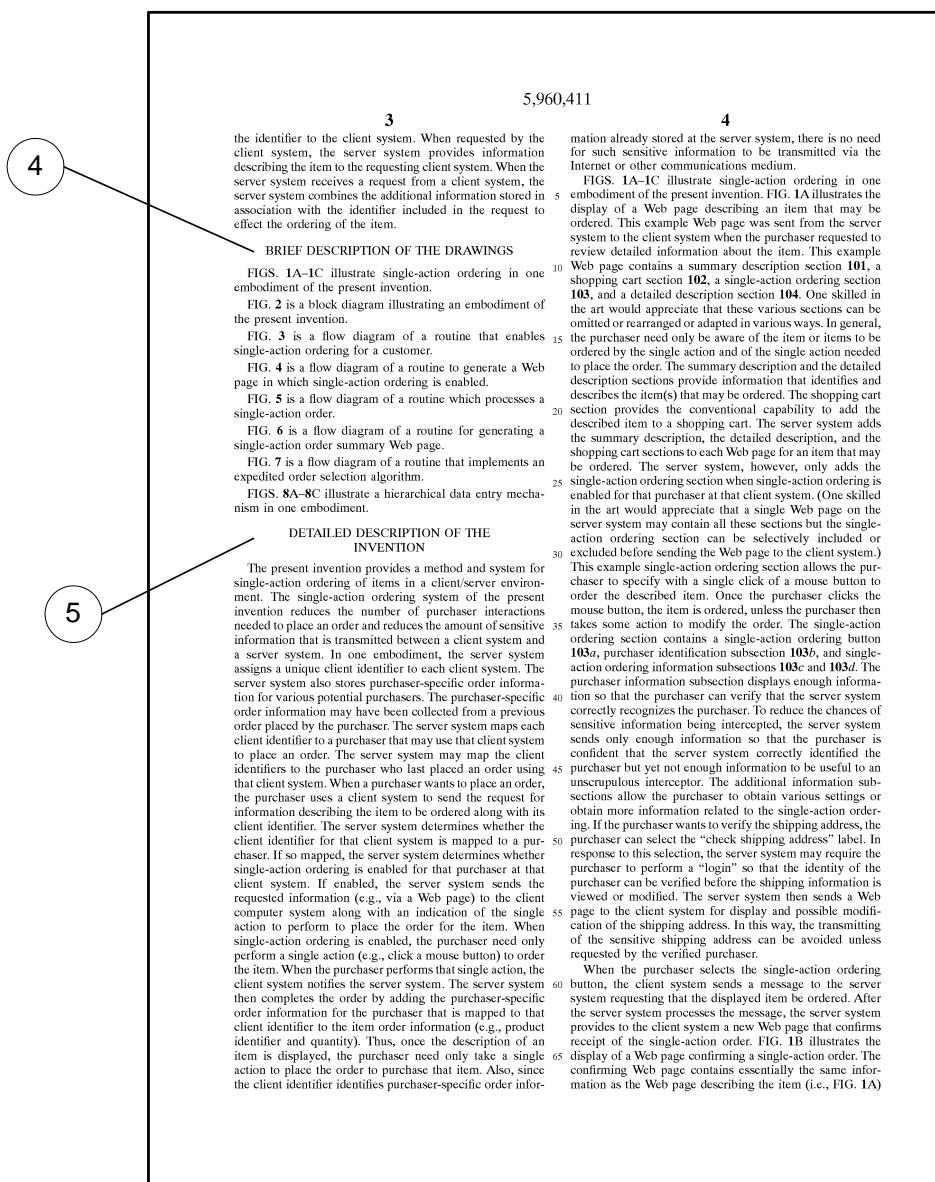
Following the Background, patents usually contain a “Summary of the Invention” (3). The summary, like the abstract, is supposed to track the invention covered by the patent and probably does not summarize everything discussed in the patent.



Following the Summary, we usually find a “Brief Description of the Drawings” (4). This is a catalog of the drawings or figures in the patent.

After the Brief Description of the Drawings, we come finally to the meat of the patent, the “Detailed Description of the Invention” (5). As the name implies, the Detailed Description gives a full and complete description of the invention, such that someone else can duplicate the invention.

Note the reference numbers, in bold, that are sprinkled throughout the Detailed Description. As mentioned above, these numbers refer the reader to appropriate portions of the figures to facilitate an understanding of the invention.



Following the Detailed Description comes the most important part of a patent, the claims (6). The claims are statements that define exactly what a patent does and does not cover. An important invention may be described in a patent, but if that invention is not claimed in the claims, it is not covered by the patent. Consequently, to determine if something infringes a patent, one must compare the claims to the device or method thought to possibly infringe. If everything stated by the claims is true of the accused device or method, the patent is infringed.

5,960,411

<p style="text-align: center;">9</p> <p>Although the algorithm has been described as having two stages, it could be implemented in an incremental fashion where the assessment of the first and second stages are redone after each order is scheduled. One skilled in the art would recognize that there are other possible combinations of these stages which still express the same essential algorithm.</p> <p>FIGS. 8A-8C illustrate a hierarchical data entry mechanism in one embodiment. When collecting information from a user, a Web page typically consists of a long series of data entry fields that may not all fit onto the display at the same time. Thus, a user needs to scroll through the Web page to enter the information. When the data entry fields do not fit onto the display at the same time, it is difficult for the user to get an overall understanding of the type and organization of the data to be entered. The hierarchical data entry mechanism allows a user to understand the overall organization of the data to be entered even though the all data entry fields would not fit onto the display at the same time. FIG. 8A illustrates an outline format of a sample form to be filled in. The sample form contains various sections identified by letters A, B, C, and D. When the user selects the start button, then section A expands to include the data entry fields for the customer name and address. FIG. 8B illustrates the expansion of section A. Since only section A has been expanded, the user can view the data entry fields of section A and summary information of the other sections at the same time. The user then enters data in the various data entry fields that are displayed. Upon completion, the user selects either the next or previous buttons. The next button causes section A to be collapsed and section B to be expanded so that financial information may be entered. FIG. 8C illustrates the expansion of section B. If the previous button is selected, then section A would collapse and be displayed as shown in FIG. 8A. This collapsing and expanding is repeated for each section. At any time during the data entry, if an error is detected, then a Web page is generated with the error message in close proximity (e.g., on the line below) to the data entry field that contains the error. This Web page is then displayed by the client system to inform the user of the error. In addition, each of the data "entry" fields may not be editable until the user clicks on the data entry field or selects an edit button associated with the data entry field. In this way, the user is prevented from inadvertently changing the contents of an edit field. When the user clicks on a data entry field, a new Web page is presented to the user that allows for the editing of the data associated with the field. When editing is complete, the edited data is displayed in the data "entry" field. Because the fields of the form are thus not directly editable, neither "named-submit" buttons nor Java are needed. Also, the form is more compact because the various data entry options (e.g., radio button) are displayed only on the new Web page when the field is to be edited.</p> <p>Although the present invention has been described in terms of various embodiments, it is not intended that the invention be limited to these embodiments. Modification within the spirit of the invention will be apparent to those skilled in the art. For example, the server system can map a client identifier to multiple customers who have recently used the client system. The server system can then allow the user to identify themselves by selecting one of the mappings based preferably on a display of partial purchaser-specific order information. Also, various different single actions can be used to effect the placement of an order. For example, a voice command may be spoken by the purchaser, a key may be depressed by the purchaser, a button on a television remote control device may be depressed by the purchaser, or</p>	<p style="text-align: center;">10</p> <p>selection using any pointing device may be effected by the purchaser. Although a single action may be preceded by multiple physical movements of the purchaser (e.g., moving a mouse so that a mouse pointer is over a button), the single action generally refers to a single event received by a client system that indicates to place the order. Finally, the purchaser can be alternately identified by a unique customer identifier that is provided by the customer when the customer initiates access to the server system and sent to the server system with each message. This customer identifier could be also stored persistently on the client system so that the purchaser does not need to re-enter their customer identifier each time access is initiated. The scope of the present invention is defined by the claims that follow.</p> <p>We claim:</p> <ol style="list-style-type: none"> <li>1. A method of placing an order for an item comprising: under control of a client system, displaying information identifying the item; and in response to only a single action being performed, sending a request to order the item along with an identifier of a purchaser of the item to a server system;</li> <li>2. The method of claim 1 wherein the displaying of information includes displaying information indicating the single action.</li> <li>3. The method of claim 1 wherein the single action is clicking a button.</li> <li>4. The method of claim 1 wherein the single action is speaking of a sound.</li> <li>5. The method of claim 1 wherein a user of the client system does not need to explicitly identify themselves when placing an order.</li> <li>6. A client system for ordering an item comprising: an identifier that identifies a customer; a display component for displaying information identifying the item; a single-action ordering component that in response to performance of only a single action, sends a request to a server system to order the identified item, the request including the identifier so that the server system can locate additional information needed to complete the order and so that the server system can fulfill the generated order to complete purchase of the item; and a shopping cart ordering component that in response to performance of an add-to-shopping-cart action, sends a request to the server system to add the item to a shopping cart.</li> <li>7. The client system of claim 6 wherein the display component is a browser.</li> <li>8. The client system of claim 6 wherein the predefined action is the clicking of a mouse button.</li> <li>9. A server system for generating an order comprising: a shopping cart ordering component; and</li> </ol>
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Claims are written according to very arcane legal rules and can be difficult to follow. For example, each claim must be a single sentence. Because claims are arguably the most important part of a patent, we will look at the claims of the 5,960,411 patent in some detail.



The subject matter of most inventions can be viewed in several different ways. For example, the invention of the 5,960,411 patent can be thought of as a method of selling merchandise on-line. Alternatively, the invention can be thought of as a system, combining software and hardware elements, for selling merchandise. Accordingly, claims can be of several different types, even within a single patent.

Claim 1 of the 5,960,411 patent is a method claim:

1. A method of placing an order for an item comprising:
  - under control of a client system,
  - displaying information identifying the item; and
  - in response to only a single action being performed, sending a request to order the item along with an identifier of a purchaser of the item to a server system;
  - under control of a single-action ordering component of the server system, receiving the request;
  - retrieving additional information previously stored for the purchaser identified by the identifier in the received request; and
  - generating an order to purchase the requested item for the purchaser identified by the identifier in the received request using the retrieved additional information; and
  - fulfilling the generated order to complete purchase of the itemwhereby the item is ordered without using a shopping cart ordering model.

Claim 6, in contrast, is a system claim that combines the one-click ordering system with a traditional shopping cart model ordering system, at the customer's option:

6. A client system for ordering an item comprising:
  - an identifier that identifies a customer;
  - a display component for displaying information identifying the item;
  - a single-action ordering component that in response to performance of only a single action, sends a request to a server system to order the identified item, the request including the identifier so that the server system can locate additional information needed to complete the order and so that the server system can fulfill the generated order to complete purchase of the item; and
  - a shopping cart ordering component that in response to performance of an add-to-shopping-cart action, sends a request to the server system to add the item to a shopping cart.

Both claims 1 and 6 are referred to as independent claims. This means that they do not refer to any other claim and each stand on their own.

A patent will also typically include dependent claims that depend from the various independent claims. An example is claim 2 of the 5,960,411 patent. Claim 2, predictably, depends from claim 1.

Claim 2 reads:

2. The method of claim 1 wherein the displaying of information includes displaying information indicating the single action.

The purpose of a dependent claim is to added additional material to the claim from which it depends. A dependent claim can depend from an independent claim or another dependent claim. A string of dependent claims can be any number of claims long. The dependent claim is considered to include all of the verbiage of the claim or claims from which it depends.

If an independent claim is ever invalidated during patent prosecution or during the life of the patent, the patent owner can fall back on the dependent claims. The dependent claims, even though narrower than the independent claim, may still provide some protection for the invention.