

US00RE49051E

(19) **United States**  
(12) **Reissued Patent**  
**Baxley et al.**

(10) **Patent Number:** **US RE49,051 E**  
(45) **Date of Reissued Patent:** **Apr. 26, 2022**

(54) **SYSTEM AND METHOD FOR SCALING UP AN IMAGE OF AN ARTICLE DISPLAYED ON A SALES PROMOTION WEB PAGE**

(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventors: **Robert H. Baxley**, Los Altos, CA (US);  
**Jeffrey Tyson**, San Jose, CA (US)

(73) Assignee: **Apple Inc.**, Cupertino, CA (US)

(21) Appl. No.: **15/789,079**

(22) Filed: **Oct. 20, 2017**

**Related U.S. Patent Documents**

Reissue of:

(64) Patent No.: **9,165,302**  
Issued: **Oct. 20, 2015**  
Appl. No.: **12/240,761**  
Filed: **Sep. 29, 2008**

(51) **Int. Cl.**

**G06F 3/048** (2013.01)  
**H04N 21/4728** (2011.01)  
**G06T 3/40** (2006.01)  
**G06Q 30/06** (2012.01)  
**G06F 3/0482** (2013.01)  
**G06Q 30/02** (2012.01)  
**H04N 21/4782** (2011.01)  
**G06F 16/54** (2019.01)  
**G06F 16/957** (2019.01)

(52) **U.S. Cl.**

CPC ..... **G06Q 30/02** (2013.01); **G06F 3/0482** (2013.01); **G06Q 30/0643** (2013.01); **G06T 3/40** (2013.01); **H04N 21/4728** (2013.01); **G06F 16/54** (2019.01); **G06F 16/957** (2019.01); **H04N 21/4782** (2013.01)

(58) **Field of Classification Search**

CPC ..... G06Q 30/02; G06Q 30/0641; G06Q 30/0643; G06T 3/40  
USPC ..... 705/26.1, 27.1, 27.2; 715/764-768, 715/788-802, 810, 815, 838  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,461,560 A \* 10/1995 Uribe ..... 700/83  
5,651,107 A \* 7/1997 Frank ..... G06F 3/0481  
345/589  
5,732,230 A \* 3/1998 Cullen ..... G06T 11/00  
345/629  
5,872,567 A \* 2/1999 Amro ..... G06F 3/0481  
715/800  
6,105,042 A \* 8/2000 Aganovic ..... G06F 3/14  
345/660  
6,133,914 A \* 10/2000 Rogers ..... G06F 3/0482  
345/473  
7,149,710 B1 \* 12/2006 Edmark ..... G06Q 30/06  
705/26.8  
7,429,993 B2 \* 9/2008 Hui ..... G06F 3/0481  
345/592  
7,739,617 B2 \* 6/2010 Ording ..... G06F 3/0481  
715/766  
7,856,380 B1 \* 12/2010 Latin-Stoermer et al. .. 705/27.1

(Continued)

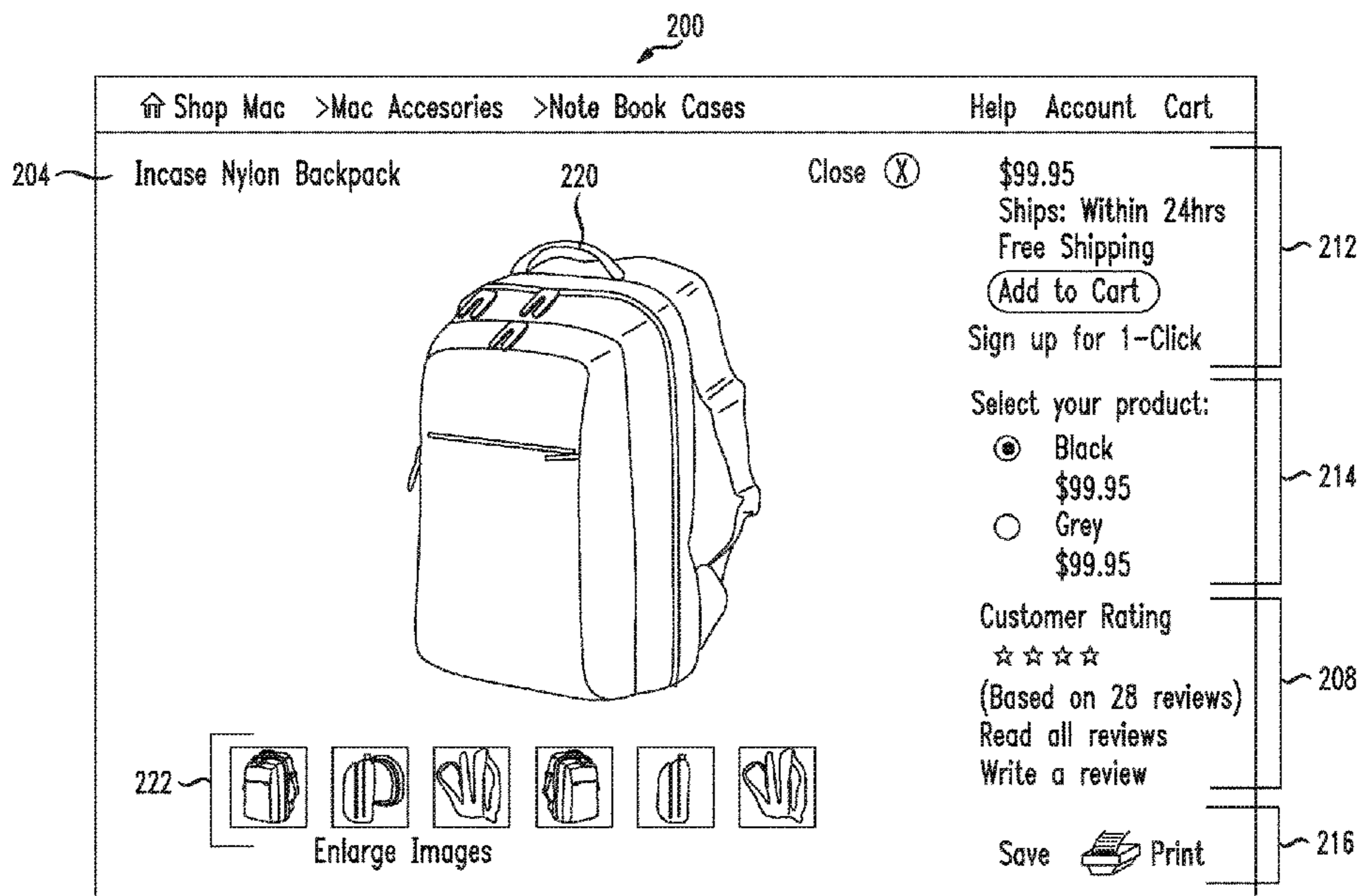
*Primary Examiner* — Adam L Basehoar

(74) *Attorney, Agent, or Firm* — Polsinelli LLP

(57) **ABSTRACT**

Method and arrangement for scale-up of an image of an article displayed on a sales promotion web page is disclosed. The method includes displaying an image of an article on a sales promotion web page in a first scale. The method then includes, based on cursor-selection of the displayed image, enlarging the scale of the image to a second larger scale on the same web page.

**22 Claims, 6 Drawing Sheets**



# US RE49,051 E

Page 2

(56)

## References Cited

### U.S. PATENT DOCUMENTS

- |              |      |         |                       |       |              |          |
|--------------|------|---------|-----------------------|-------|--------------|----------|
| 8,031,206    | B2 * | 10/2011 | Shoemaker             | ..... | G06T 3/40    | 345/619  |
| 8,078,603    | B1 * | 12/2011 | Chandratillake et al. | ....  | 707/706      |          |
| 8,296,658    | B2 * | 10/2012 | Kaplan                | ..... | G06T 11/001  | 345/594  |
| 8,311,900    | B1 * | 11/2012 | Bates                 | ..... | G06Q 30/0601 | 705/27.1 |
| 8,347,211    | B1 * | 1/2013  | Rogers, III           | ..... | G06Q 30/0643 | 715/716  |
| 8,700,490    | B1 * | 4/2014  | Bhaktwatsalam et al.  | ..    | 705/27.1     |          |
| 2002/0080276 | A1 * | 6/2002  | Mori et al.           | ..... | 348/553      |          |
| 2002/0082952 | A1 * | 6/2002  | Johnston              | ..... | 705/27       |          |
| 2002/0106111 | A1 * | 8/2002  | Kass                  | ..... | G06Q 30/06   | 382/111  |
| 2003/0023514 | A1 * | 1/2003  | Adler et al.          | ..... | 705/27       |          |
| 2003/0076435 | A1 * | 4/2003  | Sato                  | ..... | 348/333.11   |          |
| 2003/0081011 | A1 * | 5/2003  | Sheldon               | ..... | G06F 1/3231  | 715/838  |
| 2003/0164861 | A1 * | 9/2003  | Barbanson et al.      | ..... | 345/815      |          |
| 2003/0210281 | A1 * | 11/2003 | Ellis et al.          | ..... | 345/838      |          |
| 2004/0194014 | A1 * | 9/2004  | Anwar                 | ..... | 715/500      |          |
| 2005/0041146 | A1 * | 2/2005  | Lee et al.            | ..... | 348/468      |          |
| 2005/0138570 | A1 * | 6/2005  | Good et al.           | ..... | 715/789      |          |
| 2005/0195157 | A1 * | 9/2005  | Kramer et al.         | ..... | 345/156      |          |
| 2005/0235222 | A1 * | 10/2005 | Barbanson et al.      | ..... | 715/791      |          |
| 2005/0273727 | A1 * | 12/2005 | Barbanson et al.      | ..... | 715/791      |          |
| 2005/0283371 | A1 * | 12/2005 | Tiramani              | ..... | 705/1        |          |
| 2006/0048069 | A1 * | 3/2006  | Igeta                 | ..... | G06F 3/0486  | 715/769  |
| 2006/0098111 | A1 * | 5/2006  | Goh et al.            | ..... | 348/333.05   |          |
| 2006/0103891 | A1 * | 5/2006  | Atkins                | ..... | 358/450      |          |
| 2007/0110338 | A1 * | 5/2007  | Snavely et al.        | ..... | 382/305      |          |
| 2007/0165103 | A1 * | 7/2007  | Arima et al.          | ..... | 348/14.01    |          |
| 2007/0182999 | A1 * | 8/2007  | Anthony et al.        | ..... | 358/452      |          |
| 2007/0192739 | A1 * | 8/2007  | Hunleth et al.        | ..... | 715/823      |          |
| 2007/0237032 | A1 * | 10/2007 | Rhee et al.           | ..... | 368/10       |          |
| 2008/0012863 | A1 * | 1/2008  | Finn et al.           | ..... | 345/473      |          |
| 2008/0092040 | A1 * | 4/2008  | Nakamura              | ..... | 715/273      |          |
| 2008/0117232 | A1 * | 5/2008  | Edmark                | ..... | 345/630      |          |
| 2008/0225153 | A1 * | 9/2008  | Fagans                | ..... | 348/333.01   |          |
| 2008/0250332 | A1 * | 10/2008 | Farrell et al.        | ..... | 715/753      |          |
| 2008/0282196 | A1 * | 11/2008 | Park                  | ..... | 715/838      |          |
| 2009/0019369 | A1 * | 1/2009  | Borovsky et al.       | ..... | 715/736      |          |
| 2009/0109243 | A1 * | 4/2009  | Kraft et al.          | ..... | 345/660      |          |
| 2009/0132952 | A1 * | 5/2009  | Wong                  | ..... | 715/781      |          |
| 2009/0164944 | A1 * | 6/2009  | Webster               | ..... | G06F 3/0489  | 715/838  |
| 2009/0177538 | A1 * | 7/2009  | Brewer et al.         | ..... | 705/14       |          |
| 2009/0259935 | A1 * | 10/2009 | Kramer et al.         | ..... | 715/234      |          |
| 2009/0265255 | A1 * | 10/2009 | Jackson et al.        | ..... | 705/27       |          |
| 2009/0295830 | A1 * | 12/2009 | Muraveynyk            | ..... | G06F 3/0481  | 345/629  |
| 2009/0307618 | A1 * | 12/2009 | Lawler                | ..... | G06F 3/0481  | 715/764  |
| 2010/0036753 | A1 * | 2/2010  | Harvill et al.        | ..... | 705/27       |          |
| 2010/0045987 | A1 * | 2/2010  | Bonikowski et al.     | ..... | 356/402      |          |
| 2010/0164992 | A1 * | 7/2010  | Akiya                 | ..... | 345/641      |          |
| 2011/0004533 | A1 * | 1/2011  | Soto                  | ..... | G06Q 30/00   | 705/27.1 |
| 2011/0258563 | A1 * | 10/2011 | Lincke                | ..... | G06F 16/9577 | 715/760  |

\* cited by examiner

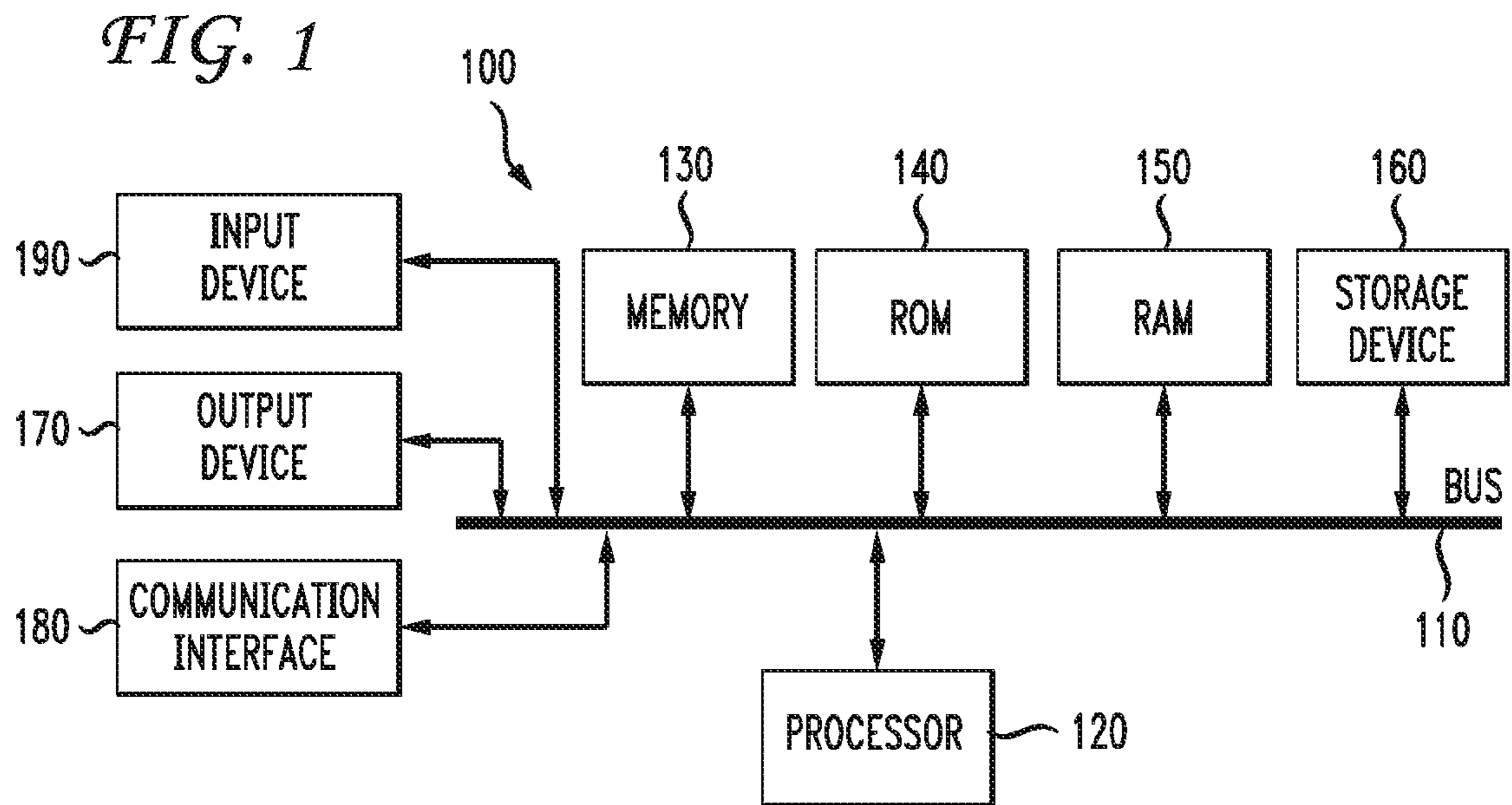


FIG. 2A

200

Shop Mac > Mac Accessories > Note Book Cases

---

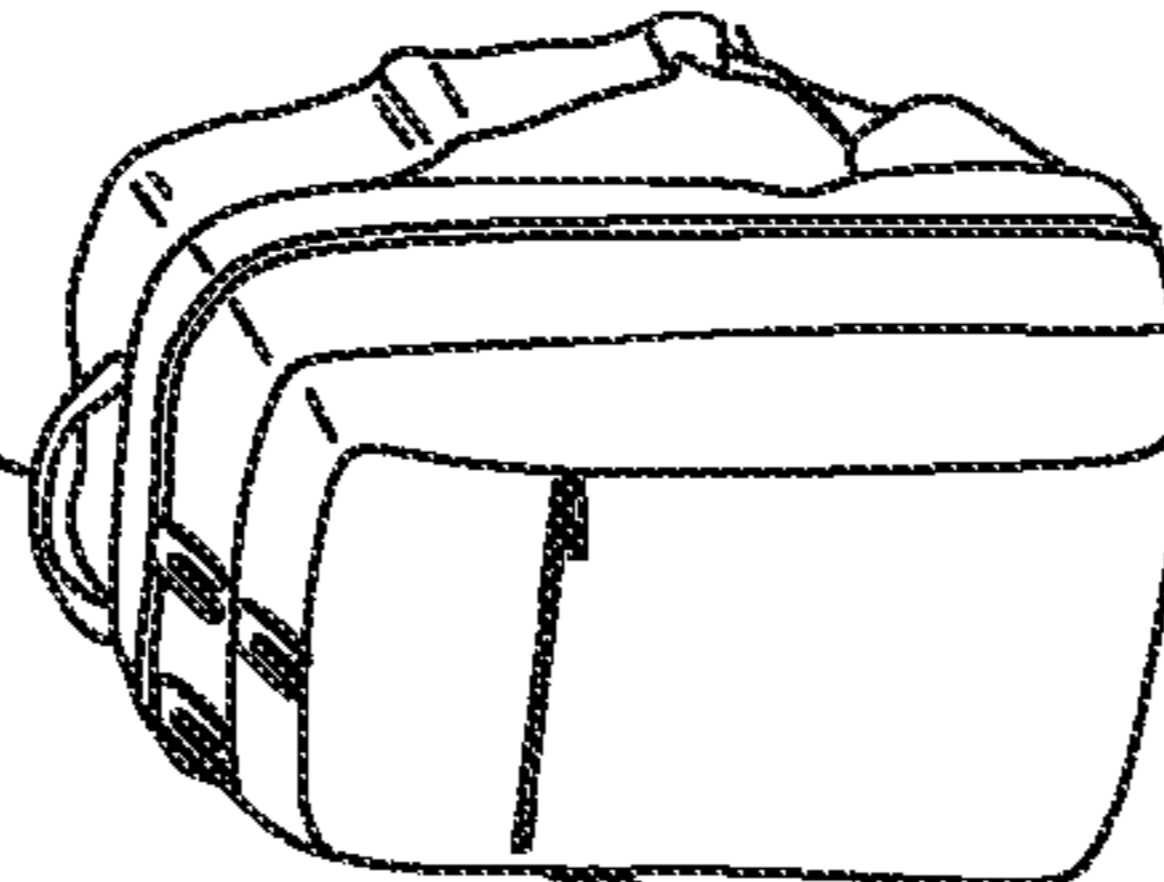
**Incase Nylon Backpack**

Education customers can save \$20 via instant discount when purchased with ant Mac from April 15 2008 through September 27 2008 or write supplies last

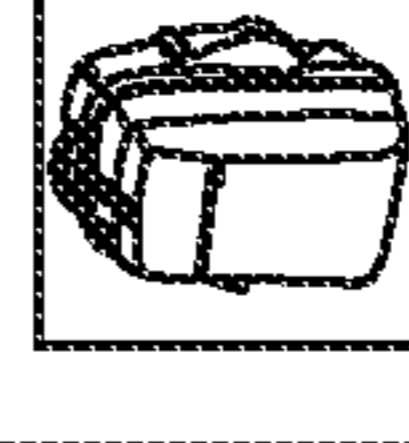
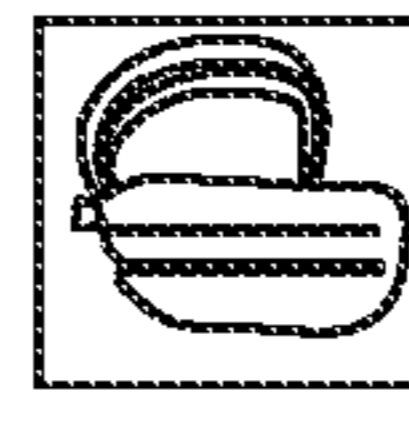

**Incase Nylon Backpack**  
 Providing an abundance of storage, the Incase Nylon Backpack keeps you organized while on the go.  
[Learn more](#)

**Purchase Information**  
 Ships: Within 24hrs Free Shipping

**Customer Rating**  
 ☆☆☆☆ (Based on 28 reviews)  
[Read all reviews](#) | [Write a review](#)



202

210 Enlarge Images

\$99.95  
 Ships: Within 24hrs  
 Free Shipping  
[Add to Cart](#)

Sign up for 1-Click


Select your product:

Black \$99.95

Grey \$99.95

212

214

Save  Print

216

204

206

208

FIG. 2B

200

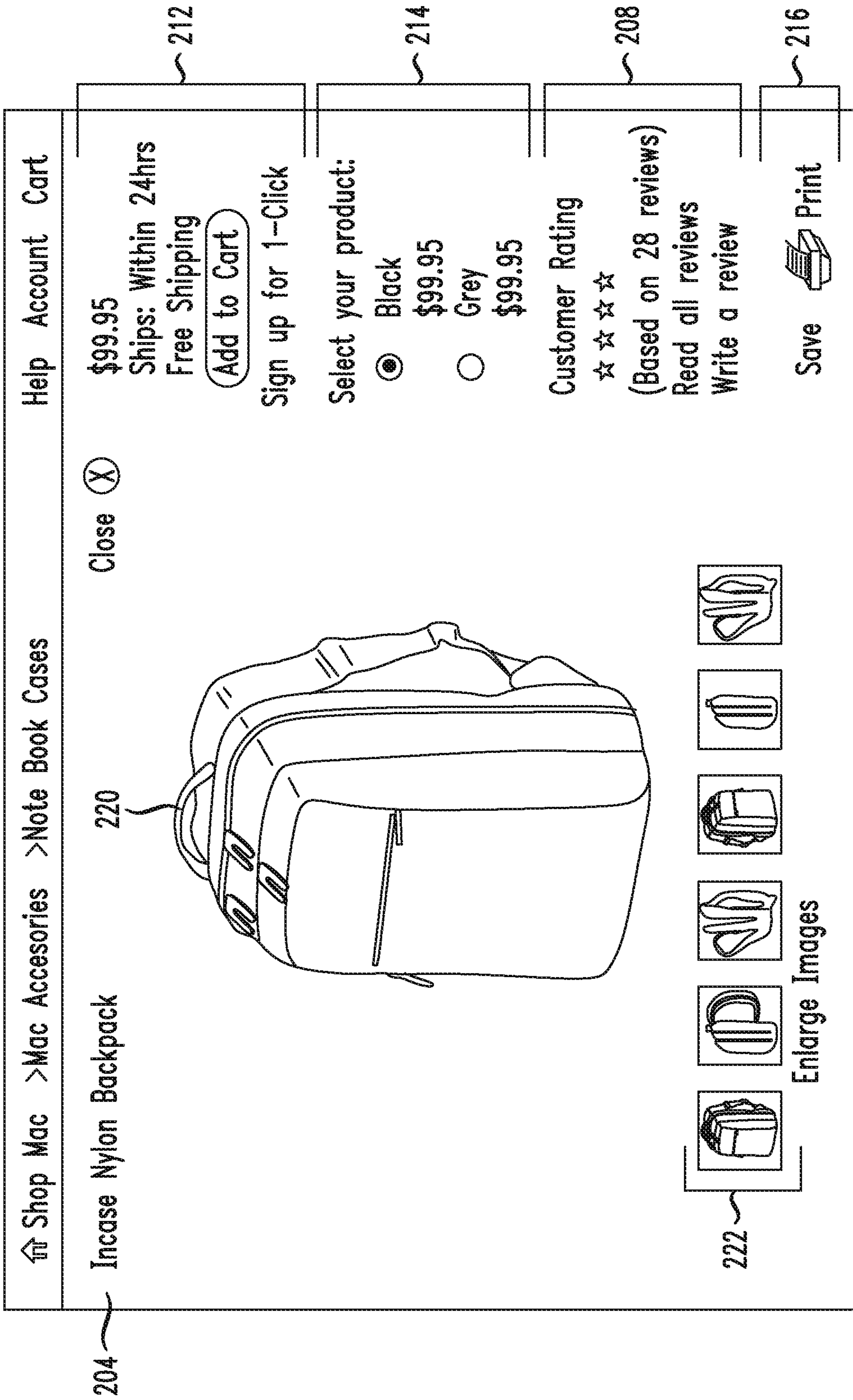


FIG. 3A

300

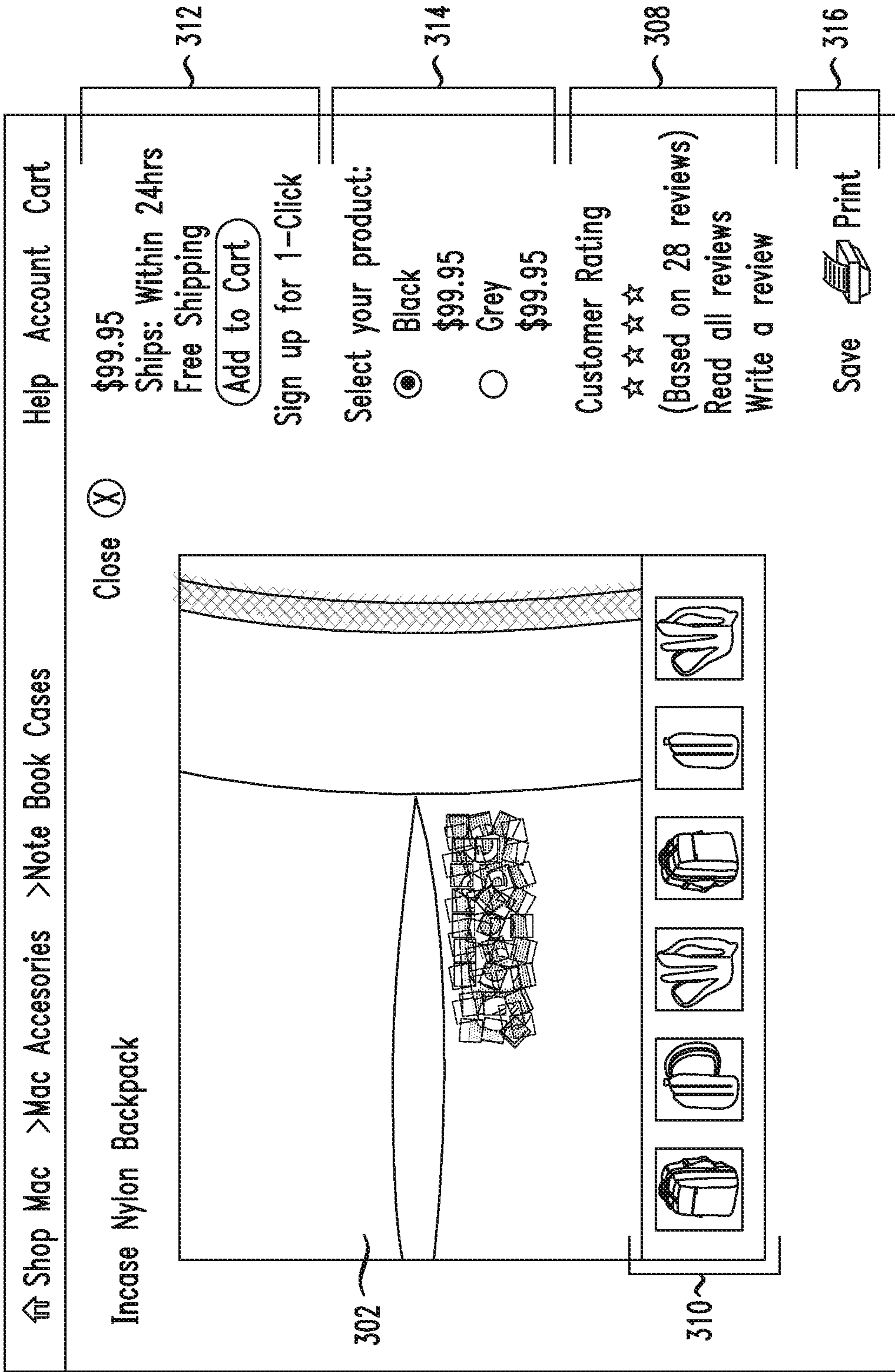
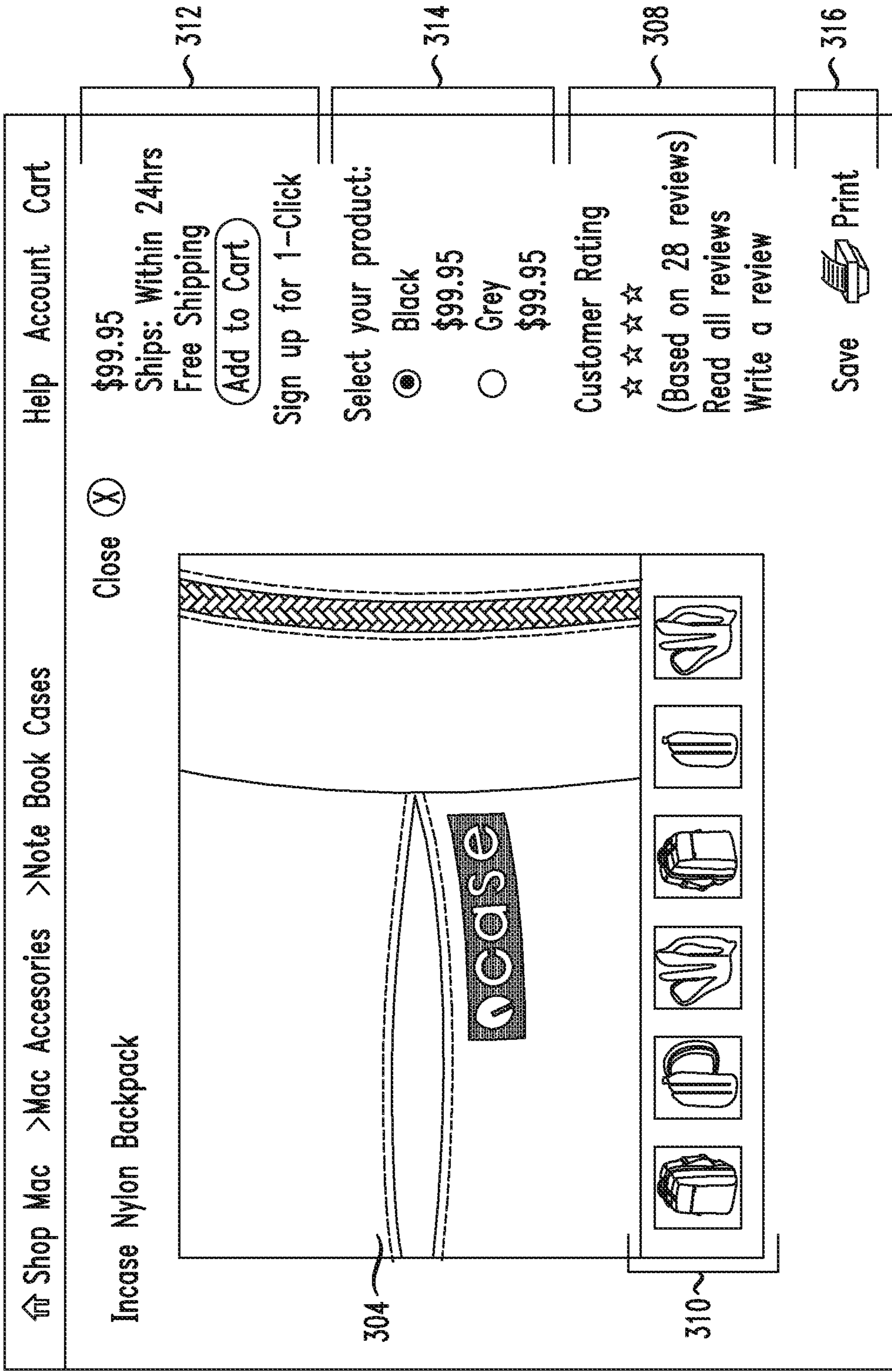
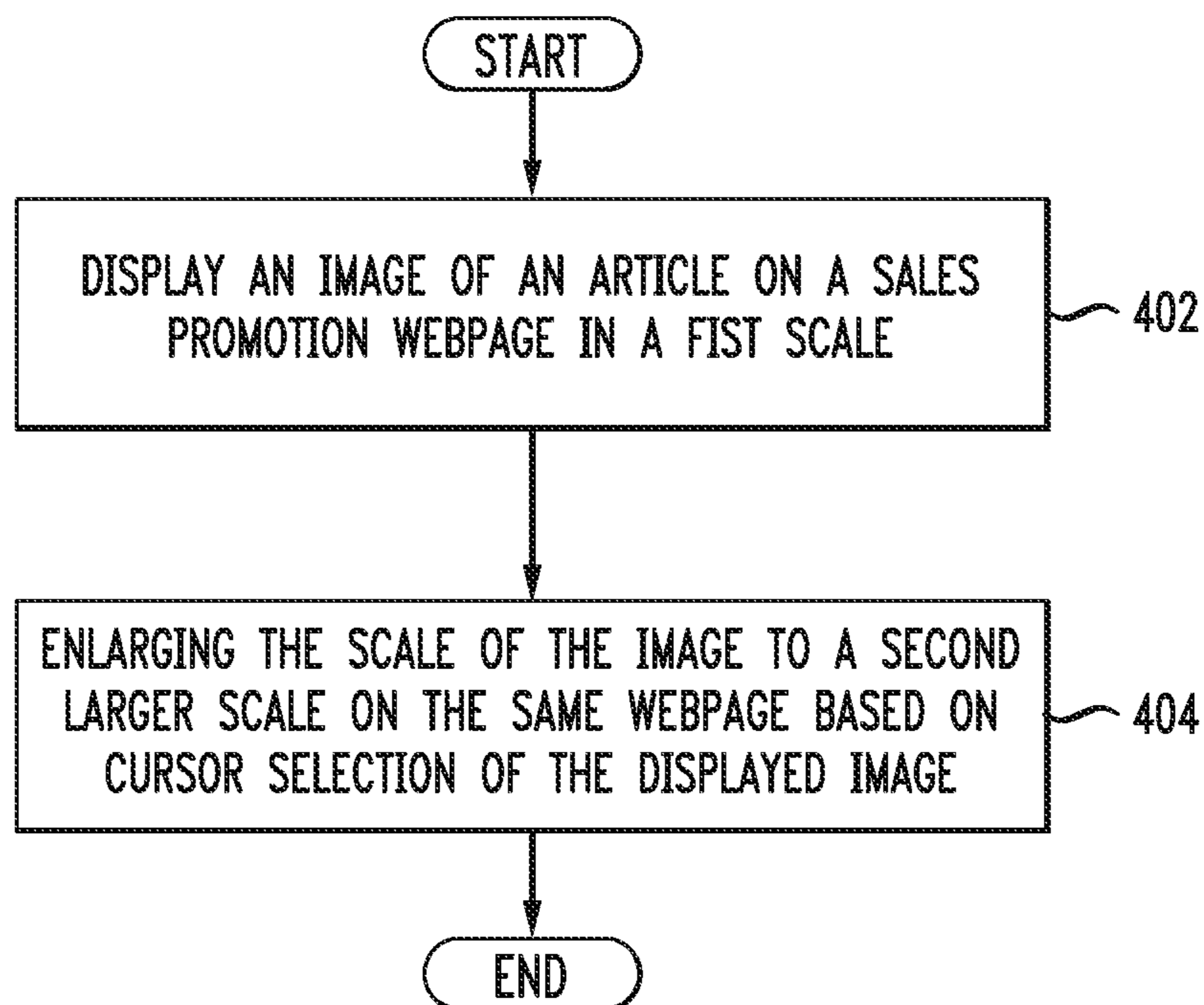


FIG. 3B

300



*FIG. 4*



**SYSTEM AND METHOD FOR SCALING UP  
AN IMAGE OF AN ARTICLE DISPLAYED ON  
A SALES PROMOTION WEB PAGE**

**Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue; a claim printed with strikethrough indicates that the claim was canceled, disclaimed, or held invalid by a prior post-patent action or proceeding.**

BACKGROUND

1. Field

The present disclosure relates to displaying images of articles for sale on a web page, and more particularly to scaling up an image of an article displayed on a sales promotion web page.

2. Introduction

With the development of the Internet, on-line stores have become very popular. These stores allow consumers with Internet access to browse and purchase articles for sale. Consumers typically access these stores through the World Wide Web via web pages viewed through a web browser. Examples of articles that can be purchased on-line include clothes, books, electronic devices, toys, games, downloadable media, travel reservations, and furniture. This is not an exhaustive list. Virtually any article that can be purchased in a traditional store can be bought from an on-line store. After the transaction is complete, the online store ships the purchased item if it is a tangible item. Alternatively, if the purchased article is digital media, the store can transfer the purchased digital content to the customer upon payment via download. Purchased digital content can be downloaded and played on personal computers, portable media players, smart phones, cell phones, televisions, television media players, video game devices and other electronic devices. On-line stores are popular with consumers because they can conveniently shop for a very large variety of articles whenever they are connected to the Internet. Generally, consumers desire an on-line store with a large selection of articles for sale with competitive prices. On-line store designers may benefit from showing a potential customer a large variety of products with smaller images, and then scale-up images of articles in which the customer indicates a particular interest in. An online store can alter the format of the web page to further tailor an article's presentation once a potential customer has indicated an interest in the item.

Traditionally, online stores have provided an enlarged or more detailed view of an item by loading a different web page containing the more detailed image. Unfortunately, downloading a different web page often involves complexities such as the need for the user to manage multiple web pages, a browsing history, pop-ups, or other mechanisms, i.e. the original web page with the smaller image and the different web page with the enlarged image. Moreover, downloading a new web page ordinarily involves a momentary delay that is noticeable to the user during which the new page flashes into view. In some parts of the world where access to the Internet is metered and not unlimited, these extra page refreshes can add up to a significant expense.

Therefore, what is needed is a system and method for scale-up of an image of an article displayed on a sales promotion web page that enlarges the image within the same web page and provides an enhanced user experience.

SUMMARY

Additional features and advantages of the disclosure will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the contained teachings. The features and advantages of the disclosure may be realized and obtained by means of the instruments and combinations particularly pointed out in the associated claims. These and other features of the disclosure will become more fully apparent from the following description and associated claims, or may be learned by the practice of the teachings set forth herein.

This disclosure describes a system and method for scaling up an image of an article displayed on a sales promotion web page. Disclosed are systems, methods and computer readable media for accomplishing this scaling up an image of an article displayed on a sales promotion web page. Sales promotion web pages include any commerce related website.

The method embodiment is illustrative of principles of the present disclosure and those same principles are also applicable to the system and computer readable medium embodiments. A method of scaling up an image of an article displayed on a sales promotion web page is disclosed. The method includes displaying an image of an article on a sales promotion web page in a first scale. Then, based on cursor-selection of the displayed image, the method includes enlarging the scale of the image to a second larger scale on the same web page.

The present disclosure may apply to any image on a sales promotion web page. These images can be, for example, in a JPG, BMP, TIFF, GIF, or PNG format, among others.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to better describe the manner in which the advantages and features of the disclosure can be obtained, a more detailed description follows with reference to specific embodiments that are illustrated in the accompanying drawings in which:

FIG. 1 illustrates an example system embodiment;

FIG. 2A illustrates an article for sale on a web page;

FIG. 2B illustrates an example system embodiment of a scaled-up of an image of an article displayed on a sales promotion web page;

FIG. 3A illustrates an example of how to enlarge the scale of a portion of the second larger scale image to a third even larger scale image based on cursor designation of the portion by continuously expanding the scale of the portion of the image from the second larger scale to the third even larger scale;

FIG. 3B illustrates an example of how to replace the third even larger scale image portion with a higher resolution image of the same image portion; and

FIG. 4 illustrates an example method embodiment for scale-up of an image of an article displayed on a sales promotion web page.

DETAILED DESCRIPTION

Various embodiments configured according to the present disclosure are discussed in detail below. While specific implementations are discussed, it should be understood that this is done for illustration purposes only. A person skilled in the relevant art will recognize that other components and configurations may be used without parting from the spirit and scope of the description.

With reference to FIG. 1, an exemplary system comprises (includes) a general-purpose computing device **100**, including a processing unit (CPU) **120** and a system bus **110** that couples various system components including the system memory such as read only memory (ROM) **140** and random access memory (RAM) **150** to the processing unit **120**. Other system memory **130** may be available for use as well. It can be appreciated that certain presently described embodiments can operate on a computing device with more than one CPU **120** or on a group or cluster of computing devices networked together to provide greater processing capability. A processing unit **120** can include a general purpose CPU controlled by software as well as a special-purpose processor. An Intel Xeon LV L7345 processor is an example of a general purpose CPU which is controlled by software. Particular functionality may also be built into the design of a separate computer chip. An STMicroelectronics STA013 processor is an example of a special-purpose processor which decodes MP3 audio files. Of course, a processing unit includes any general purpose CPU and a module configured to control the CPU as well as a special-purpose processor where software is effectively incorporated into the actual processor design. A processing unit may essentially be a completely self-contained computing system, containing multiple cores or CPUs, a bus, memory controller, cache, etcetera. A multi-core processing unit may be symmetric or asymmetric.

The system bus **110** may be any of several types of bus structures including a memory bus or memory controller, a peripheral bus, and a local bus using any of a variety of bus architectures. A basic input/output (BIOS) stored in ROM **140** or the like, may provide the basic routine that helps to transfer information between elements within the computing device **100**, such as during start-up. The computing device **100** further includes storage devices such as a hard disk drive **160**, a magnetic disk drive, an optical disk drive, tape drive or the like. The storage device **160** is connected to the system bus **110** by a drive interface. The drives and the associated computer readable media provide nonvolatile storage of computer readable instructions, data structures, program modules and other data for the computing device **100**. In one aspect, a hardware module that performs a particular function includes the software component stored in a tangible computer-readable medium in connection with the necessary hardware components, such as the CPU, bus, display, and so forth, to carry out the function. The basic components are known to those of skill in the art and appropriate variations are contemplated depending on the type of device, such as whether the device is a small, handheld computing device, a desktop computer, or a computer server.

Although the exemplary environment described herein employs the hard disk, it should be appreciated by those skilled in the art that other types of computer readable media which can store data that are accessible by a computer, such as magnetic cassettes, flash memory cards, digital versatile disks, cartridges, random access memories (RAMs), read only memory (ROM), a cable or wireless signal containing a bit stream and the like, may also be used in the exemplary operating environment.

To enable user interaction with the computing device **100**, an input device **190** represents any number of input mechanisms, such as a microphone for speech, a touch-sensitive screen for gesture or graphical input, keyboard, mouse, motion input, speech and so forth. The input may be used by the presenter to indicate the beginning of a speech search query. The device output **170** can also be one or more of a number of output mechanisms known to those of skill in the

art. In some instances, multimodal systems enable a user to provide multiple types of input to communicate with the computing device **100**. The communications interface **180** generally governs and manages the user input and system output. There is no restriction in the disclosure limiting operation to being on any particular hardware arrangement and therefore the basic features here may easily be substituted for improved hardware or firmware arrangements as they are developed.

For clarity of explanation, the illustrative system embodiment is presented as comprising individual functional blocks (including functional blocks labeled as a "processor"). The functions these blocks represent may be provided through the use of either shared or dedicated hardware, including, but not limited to, hardware capable of executing software and hardware, such as a processor, that is purpose-built to operate as an equivalent to software executing on a general purpose processor. For example the functions of one or more processors presented in FIG. 1 may be provided by a single shared processor or multiple processors. (Use of the term "processor" should not be construed to refer exclusively to hardware capable of executing software.) Illustrative embodiments may comprise microprocessor and/or digital signal processor (DSP) hardware, read-only memory (ROM) for storing software performing the operations discussed below, and random access memory (RAM) for storing results. Very large scale integration (VLSI) hardware embodiments, as well as custom VLSI circuitry in combination with a general purpose DSP circuit, may also be provided.

The logical operations of the various embodiments are implemented as: (1) a sequence of computer implemented steps, operations, or procedures running on a programmable circuit within a general use computer, (2) a sequence of computer implemented steps, operations, or procedures running on a specific-use programmable circuit; and/or (3) interconnected machine modules or program engines within the programmable circuits.

Having disclosed the fundamental elements of an example system embodiment which can be configured to practice the principles described herein, the disclosure turns to various examples which are discussed in the context of the system embodiment. As noted above, the subject matter of the present disclosure enables the scale-up of an image of an article displayed on web page. Any on-line store that presents an image of an article for sale is contemplated as within the scope of this disclosure. Other web pages which display images and thumbnails are also within the scope of this disclosure.

FIG. 2A illustrates an article for sale on a web page. The web page **200** displays an article for sale, which in this case is a nylon backpack. The web page displays a main image **202** for the article. The web page also includes thumbnail images **210** of various views of the article so that a user can examine the article. When the user selects a thumbnail image **210** based on cursor location or similar selection, the system exchanges the thumbnail image with the displayed image in a smooth, animated manner. The exchange can be exact, where the image and the thumbnail swap exact positions. The exchange can be approximate. For example, the image can return to its previous position in the set of thumbnails and the thumbnail can move to the main image's previous location, leaving a gap in the set of thumbnails. The transition is a smooth, fluid movement of both the image and the thumbnail. The image is shrunk down to a thumbnail scale and size, while the thumbnail is expanded to a larger scale and size.

The web page includes a main name or title of the article **204**. The web page further displays customer rating metadata **208**. This customer rating metadata **208** indicates the average rating for users that have written a view, as well as a link to read the reviews or write a new review. On the right side of web page **200**, the system displays price and shipping cost **212** and a link to add the item to a virtual cart, as well as an option to sign up for 1-click. 1-click is an option wherein a user can purchase items with a single click of the mouse. Additionally, the right side of web page **200** includes an option to select one of two colors **214** for the displayed item. The right side of the web page **200** includes save and print options **216**. These allow a user to print and save the displayed information on the article for sale for later viewing.

FIG. **2B** illustrates a scaled up image of the article for sale in FIG. **2A**. The system presents a scaled up image of the article for sale based on a cursor selection in one embodiment. Cursor selection can occur when a user moves a cursor over the displayed image. However, a user can trigger a cursor selection with the system based on a certain number of clicks on the displayed image. For example, an online store can designate a single click to display the image and a double click on the displayed image to act as a cursor selection and trigger the transformation to the scaled-up image of the article.

As will be appreciated by those persons skilled in these arts, other types of cursor activity, such as mouse gestures, can also define a cursor selection. The web page **200** displays the same article for sale as FIG. **2A**, which in this case is a nylon backpack. The web page displays an enlarged main image **220** for the article. The system enlarges the main image **220** to a second, larger scale on the same web page **200**. During the scaling-up from the first image **202** to the second image **220**, the system shifts the image to a second location on the same web page **200** while simultaneously scaling-up from the first scale image **202** to the second larger scale image **220**. In this embodiment the enlarged scale main image **220** is enlarged by continuously and smoothly expanding the scale of the image from the first to the second larger scale. Such a continuous and smooth expansion can provide an animation-like effect.

The web page **200** also includes thumbnail images **222** where a user can select other images of the article. The thumbnail images **222** differ in quantity and location from those depicted in FIG. **2A**. The web page **200** includes a main name of the article **204** in roughly the same position as compared to FIG. **2A**. The web page **200** further displays customer rating metadata **208**. In this embodiment, the system moves the customer rating metadata **208** from a bottom left corner of web page **200** to the bottom right corner of web page **200** to allow for the enlarged main image **220**. The customer rating metadata **208** options are unchanged from FIG. **2A** and indicate the average rating for users that have written a view, as well as a link to read the reviews or write a new review.

On the right side of web page **200**, the system displays the price, shipping cost, and a link to add the item to a virtual cart **212**, as well as an option to sign up for 1-click. Additionally, the right side of web page **200** includes an option to select one of two colors **214** for the displayed item. Also, the right side of the web page **200** includes save and print options **216**. The system does not change the location of the price and shipping area information **212**, the option to select one of two color **214** for the displayed item, and save and print options **216** from their respective positions in FIG. **2A** and FIG. **2B**. These options, as well as any other

information presented along with an article for sale, may be relocated on a web page, redacted, edited, or removed to accommodate the enlargement of the main image. In one embodiment, the system animates the web page elements which change to accommodate the enlarged image so they move smoothly from their original position and size to their new position and size in the same manner as the image and the thumbnail.

FIG. **3A** illustrates enlarging the scale of a portion of the second larger scale image to a third even larger scale image based on cursor designation of the portion. The system can enlarge the image by continuously expanding the scale of the portion of the image from the second larger scale to the third even larger scale. As shown in FIG. **3A** the web page **300** displays a third larger scale image **302** based on cursor designation of the portion. In one example, the user selects the portion of the backpack image showing the name tag of the backpack on the image. However, as described above, the cursor designation can be defined as any input from any human interface device from the user to affect the cursor, such as single-clicking, double-clicking, or gesturing on a desired designated area on a displayed article image. Also, the system can define right button mouse or trackball clicks to act as a cursor designation.

The system can display all of the scale-ups of an image of an article on a web page within the same page without refreshing or navigating elsewhere. A system, such as a web server, can use Asynchronous Javascript and XML (AJAX) to provide such an effect. It is also contemplated that other technologies, languages, and web platforms can be used.

The web page **300** further displays customer rating metadata **308**. On the right side of web page **300** a price and shipping area **312** displays price, shipping cost, and a link to add the item to a virtual cart, as well as an option to sign up for 1-click. Additionally, the right side of web page **300** includes an option to select one of two colors **314** for the displayed item. Also, the right side of the web page **300** includes save and print options **316**.

FIG. **3B** illustrates a higher resolution replacement image **304** that replaces the third even larger scale image portion **302**. On the right side of web page **300** a price and shipping area **312** displays price, shipping cost, and a link to add the item to a virtual cart, as well as an option to sign up for 1-click. Additionally, the right side of web page **300** includes an option to select one of two colors **314** for the displayed item. The right side of the web page **300** includes save and print options **316**. The location of price and shipping area information **312**, an option to select one of two color **314** for the displayed item, and save and print options **316** remain in the same relative positions in FIG. **3A** and FIG. **3B**. However, these options, as well as any other information presented along with an article for sale may be relocated, edited, redacted, or removed upon the replacement of the third larger scale image **302** with the higher resolution image **304**.

FIG. **4** illustrates an example method embodiment for scaling up an image of an article displayed on a sales promotion web page. The method embodiment is discussed in terms of a system configured to practice the method. Such a system can be a single web server, a cluster of web servers, a personal computer, a PDA, smartphone, etcetera. The system displays an image of an article on a web page in a first scale (**402**). The system enlarges the image to a second larger scale on the same web page based on a selection of the displayed image by smoothly expanding the image from the first scale to the second larger scale (**404**). In one embodi-

ment, the system shifts the image to a second location on the same web page while simultaneously enlarging the image.

In another embodiment, the system enlarges a portion of the second larger scale image to a third even larger scale image based on a designation of the portion by smoothly expanding the portion of the image from the second larger scale to the third even larger scale. In one variation on this embodiment, the system replaces the third even larger scale image portion with a corresponding higher resolution image. A user who desires to see fine details of an article may find this variation useful. For example, with articles of clothing, a high-level picture of the entire blouse is insufficient to convey the subtle colors and textures which are more apparent when viewed from a shorter distance. With articles of this sort, users appreciate and benefit from enlarged, higher resolution images.

In one embodiment involving thumbnails, the system displays alternative thumbnail images of the article on the same web page, receives a designation of a selected thumbnail image, and exchanges the selected thumbnail with the enlarged image by simultaneously smoothly enlarging the thumbnail, smoothly reducing the enlarged image, and smoothly transitioning the image and the thumbnail to each other's respective location. This effect provides immediate feedback to a user so that the user knows where an image comes from and where an image goes. Users can track each image and thumbnail visually through the smoothly animated motion and scaling. In one variation, the system remembers the scale of the enlarged image and applies it to an exchanged thumbnail. For example, if image A is zoomed into a higher resolution view, and thumbnail B is selected to replace it, the system swaps the image A and thumbnail B. The system further enlarges thumbnail B to the same level of detail and resolution at which image A had been before. In a second variation, if image A is zoomed into a higher resolution view, and thumbnail B is selected to replace it, the system swaps the image A and thumbnail B. However, in this second variation the system enlarges thumbnail B to a default level of detail and resolution. Then upon a user selection of a portion of image B the system enlarges image B to the same level of detail and resolution at which image A had been before.

In order to accommodate a larger scale image, the system can remove, relocate, or reformat web page elements such as the title, price, reviews, overview, etcetera shown in FIGS. 2A, 2B, 3A, and 3B. The system can further overlay semitransparent information, such as web page elements, over the second larger scale image, at least partially. The system can overlay the information in order to allow a larger image. In some instances, a larger, partially obscured image is desirable over a smaller, unobscured image.

Embodiments within the scope of the present disclosure may also include computer-readable media for carrying or having computer-executable instructions or data structures stored thereon. Such computer-readable media can be any available media that can be accessed by a general purpose or special purpose computer, including the functional design of any special purpose processor as discussed above. By way of example, and not limitation, such computer-readable media can comprise RAM, ROM, EEPROM, CD-ROM or other optical disk storage, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to carry or store desired program code means in the form of computer-executable instructions, data structures, or processor chip design. When information is transferred or provided over a network or another communications connection (either hardwired, wireless, or combination thereof)

to a computer, the computer properly views the connection as a computer-readable medium. Thus, any such connection is properly termed a computer-readable medium. Combinations of the above are also included within the scope of the described computer-readable media.

Computer-executable instructions include, for example, instructions and data which cause a general purpose computer, special purpose computer, or special purpose processing device to perform a certain function or group of functions. Computer-executable instructions also include program modules that are executed by computers in stand-alone or network environments. Generally, program modules include routines, programs, objects, components, data structures, and the functions inherent in the design of special-purpose processors, etcetera that perform particular tasks or implement particular abstract data types. Computer-executable instructions, associated data structures, and program modules represent examples of the program code means for executing steps of the methods disclosed herein. The particular sequence of such executable instructions or associated data structures represents examples of corresponding acts for implementing the functions described in such steps.

Those of skill in the art will appreciate that other embodiments configured according to these teachings may be practiced in network computing environments with many types of computer system configurations, including personal computers, hand-held devices, multi-processor systems, microprocessor-based or programmable consumer electronics, network PCs, minicomputers, mainframe computers, and the like. Embodiments may also be practiced in distributed computing environments where tasks are performed by local and remote processing devices that are linked (either by hardwired links, wireless links, or by a combination thereof) through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.

Although the above description may contain specific details, it should not be construed as limiting to the claims in any way. Other configurations of the described embodiments also fit within the scope of what is claimed. For example, the principles described herein can be applied to non-commercial, non-advertising images, such as an online photo album. Accordingly, the claims and their legal equivalents are what define the patent coverage contained herein, rather than any specific examples given.

We claim:

1. A method comprising:

displaying a first image *in a main display area* and a second image *in a thumbnail display area* on a web page hosted on a web server, wherein the first image is displayed in a first scale and the second image is displayed in a second scale that is smaller than the first scale;

receiving a selection of the second image;

based on the selection, [moving the second image to a first location associated with the first image and moving the first image to a second location corresponding to a previous location of the second image on the web page] *displaying the second image in the main display area by replacing the first image*, wherein the second image is [enlarged to the first scale as the second image is moved to the first location, the enlarging being performed in a continuous and animated manner, without refreshing the web page] *presented in the first scale, and the first image is presented in the second scale;*

9

while the second image is [located at the first location] *displayed in the main display area*, detecting that an indicator is positioned at a first point over the second image, wherein movement of the indicator is controlled by a user;

in response to detecting that the indicator is positioned at the first point, enlarging a portion of the second image corresponding to the first point, wherein the portion of the second image that is enlarged is presented in a third scale that is larger than the first scale; [and]

after enlarging the portion of the second image, relocating web page elements to accommodate the *enlarged* portion of the second image, wherein relocating the web page elements comprises animating the web page elements to smoothly move from an original position and size to a new position and new size;

*receiving a further selection of an image presented in the second scale from the thumbnail display area; and presenting the selection of the image presented in the second scale in the same scale as the scale of a most recently enlarged image.*

2. The method of claim 1, wherein enlarging the portion of the second image is performed by smoothly expanding the portion of the second image to the third scale.

3. The method of claim 2, wherein the portion of the second image that is enlarged *to be presented in a third scale* is presented at a first resolution level [and a second portion of the second image that is not enlarged is presented at a second resolution level, the first resolution level being higher than the second resolution level] *that is higher than the resolution level of the second image that is presented at the first scale.*

4. The method of claim 1, further comprising:  
displaying alternative thumbnail images on the web page *in the thumbnail display area*, wherein the second image comprises one of the alternative thumbnail images;  
receiving a designation of a selected thumbnail image, the selected thumbnail image being the second image;  
exchanging the selected thumbnail image with the first image by smoothly enlarging the selected thumbnail image, smoothly reducing the first image in size, and smoothly transitioning the first image *to the thumbnail display area* and the selected thumbnail [image to each other's respective location] *to the main display area*; and  
presenting an animated movement of information associated with at least one of the selected thumbnail image and the first image.

5. The method of claim 1, further comprising removing the web page elements to accommodate the second image.

6. The method of claim 1, further comprising converting the web page elements to semi-transparent form and at least partially overlaying the web page elements in semi-transparent form on the [first] *second image.*

7. A system comprising:  
a computer processor; and  
a memory containing instructions that, when executed, cause the computer processor to:  
display a first image *in a main display area* and a second image *in a thumbnail display area* on a web page hosted on a web server, wherein the first image is displayed in a first scale and the second image is displayed in a second scale that is smaller than the first scale;

10

receive a selection of the second image;  
based on the selection, [move the second image to a first location associated with the first image and moving the first image to a second location corresponding to a previous location of the second image on the web page] *display the second image in the main display area by replacing the first image*, wherein the second image is [enlarged to the first scale as the second image is moved to the first location, the enlarging being performed in a continuous and animated manner] *presented in the first scale, and the first image is presented in the second scale, without refreshing the web page;*

while the second image is [located at the first location] *displayed in the main display area*, detect that an indicator is positioned at a first point over the second image, wherein movement of the indicator is controlled by a user;

in response to detecting that the indicator is positioned at the first point, enlarge a portion of the second image corresponding to the first point, wherein the portion of the second image that is enlarged is presented in a third scale that is larger than the first scale, and  
after enlarging the portion of the second image, relocate web page elements to accommodate the *enlarged* portion of the second image, wherein relocating the web page elements comprises animating the web page elements to smoothly move from an original position and size to a new position and new size;

*after enlarging the portion of the second image, receiving a selection of the first image or a third image; and in response to the selection of the first image or the third image, displaying the selected first image or third image in the third scale.*

8. The system of claim 7, wherein enlarging the portion of the second image is performed by smoothly expanding the portion of the second image to the third scale.

9. The system of claim 8, wherein the portion of the second image that is enlarged *to be presented in a third scale* is presented at a first resolution level [and a second portion of the second image that is not enlarged is presented at a second resolution level, the first resolution level being higher than the second resolution level] *that is higher than the resolution level of the second image that is presented at the first scale.*

10. The system of claim 7, wherein the instructions further cause the computer processor to:  
display alternative thumbnail images on the web page *in the thumbnail display area*, wherein the second image comprises one of the alternative thumbnail images;  
receiving a designation of a selected thumbnail image, the selected thumbnail image being the second image;  
exchange the selected thumbnail image with the first image by smoothly enlarging the selected thumbnail image, smoothly reducing the first image in size, and smoothly transitioning the first image *to the thumbnail display area* and the selected thumbnail [image to each other's respective location] *to the main display area*; and  
present an animated movement of information associated with at least one of the selected thumbnail image and the first image.

11. The system of claim 7, wherein the instructions further cause the computer processor to:  
remove the web page elements to accommodate the second image.

11

12. The system of claim 7, wherein the instructions further cause the computer processor to:

convert the web page elements to semi-transparent form and at least partially overlaying the web page elements in semi-transparent form on the [first] second image.

13. A non-transitory computer-readable medium storing instructions that, when executed by a computer processor, cause the computer processor to:

display a first image in a main display area and a second image in a thumbnail display area on a web page hosted on a web server, wherein the first image is displayed in a first scale and the second image is displayed in a second scale that is smaller than the first scale;

receive a selection of the second image;

based on the selection, [move the second image to a first location associated with the first image and moving the first image to a second location corresponding to a previous location of the second image on the web page] display the second image in the main display area by replacing the first image, wherein the second image is [enlarged to the first scale as the second image is moved to the first location, the enlarging being performed in a continuous and animated manner, without refreshing the web page] presented in the first scale, and the first image is presented in the second scale;

while the second image is [located at the first location] displayed in the main display area, detect that an indicator is positioned at a first point over the second image, wherein movement of the indicator is controlled by a user;

in response to detecting that the indicator is positioned at the first point, enlarge at least a portion of the second image corresponding to the first point, wherein the at least the portion of the second image that is enlarged is presented in a third scale that is larger than the first scale, and

after enlarging the at least the portion of the second image, relocate web page elements to accommodate the at least the portion of the second image, wherein relocating the web page elements comprises animating the web page elements to smoothly move from an original position and size to a new position and new size;

receiving a further selection of an image presented in the second scale from the thumbnail display area; and presenting the selection of the image presented in the second scale in the same scale as the scale of a most recently enlarged image.

14. The non-transitory computer-readable medium of claim 13, wherein the portion of the second image that is

12

enlarged is presented at a higher resolution level than the portion of the second image prior to being enlarged.

15. The non-transitory computer-readable medium of claim 13, wherein the instructions further cause the computer processor to:

display alternative thumbnail images on the web page in the thumbnail display area, wherein the second image comprises one of the alternative thumbnail images;

receiving a designation of a selected thumbnail image, the selected thumbnail image being the second image;

exchange the selected thumbnail image with the first image by smoothly enlarging the selected thumbnail image, smoothly reducing the first image in size, and smoothly transitioning the first image to the thumbnail display area and the selected thumbnail to the main display area; and

present an animated movement of information associated with at least one of the selected thumbnail image and the first image.

16. The non-transitory computer-readable medium of claim 13, wherein the instructions further cause the computer processor to:

remove the web page elements to accommodate the second image.

17. The non-transitory computer-readable medium of claim 13, wherein the instructions further cause the computer processor to:

convert the web page elements to semi-transparent form and at least partially overlaying the web page elements in semi-transparent form on the second image.

18. The method of claim 1, comprising displaying the enlarged portion in an overlay at least partially overlaying the web page elements.

19. The system of claim 7, wherein the instructions further cause the computer processor to: display the enlarged portion in an overlay at least partially overlaying the web page elements.

20. The non-transitory computer-readable medium of claim 13, wherein the instructions further cause the computer processor to: display the enlarged portion in an overlay at least partially overlaying the web page elements.

21. The method of claim 1, comprising:

displaying alternative thumbnail images for the same item on the web page in the thumbnail display area, wherein the second image comprises one of the alternative thumbnail images.

22. The method of claim 1, wherein the relocating the web page elements to accommodate the enlarged portion of the second image, further includes relocating the web page elements to accommodate the thumbnail display area.

\* \* \* \* \*