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(54) Title: METHOD FOR FORMATTING TEXT FOR DISPLAY ON AN E-READER

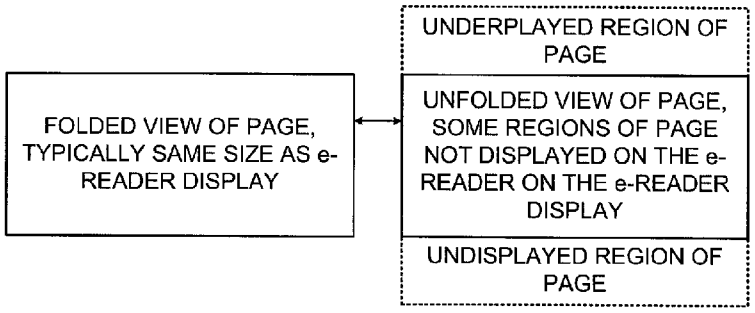

FIG. 4

(57) Abstract: A method and system for laying out a text for displaying on an e-Reader is described, the method and system including receiving a laid out version of the text, the laid out version being laid out for printing, the laid out version including articles to be printed on a first page of text, the first page of text including a plurality of articles, each one of the plurality articles being one of fully displayed on the first page of text, and continued on a second page of text, preparing a first e-Reader page view and a second e-Reader page view for displaying on the e-Reader the first e-Reader page view including any of truncated and full versions of the plurality of articles, and the second e-Reader page view corresponding to the first e-Reader page view, the second e-Reader page view including full versions of the plurality of articles, the preparing including a) proportionally shrinking the laid out version of the text whereby the laid out version of the text is made to fit on a display of the e-Reader, b) identifying a first group of articles, the first group of articles including articles that fall below a predetermined minimum text size on the display of the e-Reader, c) changing the identified first group of articles so that the identified first group of articles exceed the predetermined minimum text size on the display of the e-Reader, d) truncating the changed identified first group of articles in the first e-Reader page view, maintaining a complete version of the truncated first group of articles in the second e-Reader page view, f) identifying a second group of articles, the second group of articles including articles including column text that falls beneath a minimum threshold column width, g) reducing the number of columns in any article among the second group of articles identified as including column text that falls beneath the minimum threshold column width, h) truncating the changed identified articles among the second group of articles in the first e-Reader page view, i) maintaining a complete version of the truncated articles among the second group of articles

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in the second e-Reader page view, j) iteratively repeating steps f - i until the first e- Reader page view and the corresponding second e-Reader page view are completely laid out, k) producing a first file including the text in the first e-Reader page view and a second file including the text in the second e-Reader page view, wherein the second e-Reader page view includes a vertical expansion of the first e-Reader page view. Related apparatus, systems and methods are also described.

METHOD FOR FORMATTING TEXT FOR DISPLAY ON AN E-READER

BACKGROUND OF THE INVENTION

Print edition newspapers are typically of a size that, were a full size print edition of a newspaper to be displayed on a display window of an e-Reader device, the full size print edition of the newspaper would easily exceed the size of the display window.

The present specification and claims describe methods and systems drawn to:

a vertically oriented solution for displaying content from a page of the full size print edition of the newspaper on the display window of the e-Reader device;

a horizontally oriented solution for displaying content from a page of the full size print edition of the newspaper on the display window of the e-Reader device; and

a combination of the vertically oriented solution and the horizontally oriented solution for displaying content from a page of the full size print edition of the newspaper on the display window of the e-Reader device.

The term "text" as used herein in the specification and claims, in all of its grammatical forms, is understood in a broad sense, not limited merely to words, but rather, in the sense of a set of symbols (words, pictures, and other graphical elements) comprising an edition of a work suitable for publishing.

The Electronic Broadsheet, 30 June 1995 of Hakon Wium Lie, submitted to the Media Arts and Sciences Section, School of Architecture and Planning, in partial fulfillment of the requirements of the degree of Master of Science at the Massachusetts Institute of Technology, June 1991 (viewable at www.w3.org/People/howcome/TEB/www/hwl_th_11.html) is an academic discussion of how to layout an electronic newspaper. There is no consideration of the device on which the electronic newspaper is read.

Braganza, Cameron et al. "Scrolling behaviour with single- and multi-column layout" *International World Wide Web Conference Proceedings of the 18th international conference on World wide web Madrid, Spain* (SESSION: User interfaces and mobile web/session: user interfaces), pp/ 831-840; 2009, presents a study of how people read a window that scrolls horizontally vs. a window that scrolls vertically.

The following patents and patent applications are also believed to reflect the state of the art:

KR 2004-0076327 of Samsung Electronics Co. Ltd.;

US 2001/0047373 of Jones, et al.;

US 2004/0148574 of Ohtani, et al.;

US 2006/0281058 of Mangoaela;

US 2010/0064030 of Miura;

US 2010/0066685 of Cain, et al.;

US 6,766,362 of Miyasaka et al.;

US 7,472,340 of Burago et al.;

US 7,765,470 of Epstein;

US 5,956,738 of Shirakawa;

US 6,374,273 of Webster;

US 7,478,334 of Chen, et al.;

US 7,559,021 of Chen, et al.; and

WO 01/29694 of Nokia, Inc.

SUMMARY OF THE INVENTION

The present invention, in certain embodiments thereof, seeks to provide an improved method and system for displaying a text on an e-Reader.

A method for laying out a text for displaying on an e-Reader, the method including receiving a laid out version of the text, the laid out version being laid out for printing, the laid out version including articles to be printed on a first page of text, the first page of text including a plurality of articles, each one of the plurality articles being one of fully displayed on the first page of text, and continued on a second page of text, preparing a first e-Reader page view and a second e-Reader page view for displaying on the e-Reader the first e-Reader page view including any of truncated and full versions of the plurality of articles, and the second e-Reader page view corresponding to the first e-Reader page view, the second e-Reader page view including full versions of the plurality of articles, the preparing including a) proportionally shrinking the laid out version of the text whereby the laid out version of the text is made to fit on a display of the e-Reader, b) identifying a first group of articles, the first group of articles including articles that fall below a predetermined minimum text size on the display of the e-Reader, c) changing the identified first group of articles so that the identified first group of articles exceed the predetermined minimum text size on the display of the e-Reader, d) truncating the changed identified first group of articles in the first e-Reader page view, e) maintaining a complete version of the truncated first group of articles in the second e-Reader page view, f) identifying a second group of articles, the second group of articles including articles including column text that falls beneath a minimum threshold column width, g) reducing the number of columns in any article among the second group of articles identified as including column text that falls beneath the minimum threshold column width, h) truncating the changed identified articles among the second group of articles in the first e-Reader page view, i) maintaining a complete version of the truncated articles among the second group of articles in the second e-Reader page view, j) iteratively repeating steps f - i until the first e-Reader page view and the corresponding second e-Reader page view are completely laid out, k) producing a first file including the text in the first e-Reader page view and a second file including the text in the second e-Reader page view, wherein the second e-Reader page view includes a vertical expansion of the first e-Reader page view.

Further in accordance with an embodiment of the present invention the predetermined minimum text size on the display of the e-Reader is dependent, at least in part, on any of display screen attributes, and font attributes.

Still further in accordance with an embodiment of the present invention characters of the identified articles in step e is changed by changing, at least in part, any one of changing font attributes of the characters, and changing text block attributes of the characters.

There is also provided in accordance with another embodiment of the present invention a system for laying out a text for displaying on an e-Reader, the system including a receiver included in an editing station, the receiver being operative to receive a laid out version of the text, the laid out version being laid out for printing, the laid out version including articles to be printed on a first page of text, the first page of text including a plurality of articles, each one of the plurality articles being one of fully displayed on the first page of text, and continued on a second page of text, the editing station being operative to prepare a first e-Reader page view and a second e-Reader page view for displaying on the e-Reader the first e-Reader page view including any of truncated and full versions of the plurality of articles, and the second e-Reader page view corresponding to the first e-Reader page view, the second e-Reader page view including full versions of the plurality of articles, the editing station being operative to a) proportionally shrink the laid out version of the text whereby the laid out version of the text is made to fit on a display of the e-Reader, b) identify a first group of articles, the first group of articles including articles that fall below a predetermined minimum text size on the display of the e-Reader, c) change the identified first group of articles so that the identified first group of articles exceed the predetermined minimum text size on the display of the e-Reader, d) truncate the changed identified first group of articles in the first e-Reader page view, e) maintain a complete version of the truncated first group of articles in the second e-Reader page view, f) identify a second group of articles, the second group of articles including articles including column text that falls beneath a minimum threshold column width, g) reduce the number of columns in any article among the second group of articles identified as including column text that falls beneath the minimum threshold column width, h) truncate the changed identified articles among the

second group of articles in the first e-Reader page view, i) maintain a complete version of the truncated articles among the second group of articles in the second e-Reader page view, j) iteratively repeat steps f - i until the first e-Reader page view and the corresponding second e-Reader page view are completely laid out, k) produce a first file including the text in the first e-Reader page view and a second file including the text in the second e-Reader page view, wherein the second e-Reader page view includes a vertical expansion of the first e-Reader page view.

There is also provided in accordance with still another embodiment of the present invention a method for laying out a text for displaying on an e-Reader, the method comprising receiving a laid out version of the text, the laid out version being laid out for printing, the laid out version comprising articles to be printed on a first and a second page of text, the first page of text comprising a plurality of articles, each one of the plurality articles being one of fully displayed on the first page of text, fully displayed on the second page of text, and displayed on both the first and second page of text, the second page of text being horizontally oriented with respect to the first page of text, laying out the text for display on the e-Reader in a folded or an unfolded format, thereby producing e-Reader pages, identifying snap points on the e-Reader pages, the identifying snap points comprising determining a plurality of vertical borders on the e-Reader pages, aligning articles having a first-side page edge border in the e-Reader pages as having the first-side page edge vertical border for display in the e-Reader version of the text, aligning articles having a second-side page edge border in the e-Reader pages as having the second-side page edge border for display in the e-Reader version of the text, identifying a first first-side vertical border of a first article which is displayed in part on the e-Reader display and which is not completely displayed on the e-Reader display when the first-side edge of the e-Reader display is focused on the first-side border, setting a first snap point along a vertical line corresponding to the first vertical border, identifying a second first-side vertical border of a second article which is displayed in part on the e-Reader display and which is not completely displayed on the e-Reader display when the first-side edge of the e-Reader display is focused on the first snap border, setting a second snap point along a vertical line corresponding to the second vertical border, and repeating the steps of identifying a second first-side vertical border and setting

a second snap point until the second-side edge side of the page is displayed in the e-Reader display, the repeating being performed symmetrically with respect to both the first-side edge and the second-side edge of the page.

Further in accordance with an embodiment of the present invention, the present invention comprises preparing a first e-Reader page view corresponding to a page having the first-side border.

Still further in accordance with an embodiment of the present invention, the present invention comprises preparing an e-Reader page view corresponding to each page having the first-side border corresponding to one of the set snap points.

Additionally in accordance with an embodiment of the present invention the laid out version of the text being a text graphically laid out on either a cylinder or a sphere.

Moreover in accordance with an embodiment of the present invention, the present invention comprises outputting the formatted text to the e-Reader display.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description, taken in conjunction with the drawings in which:

Fig. 1 is a simplified pictorial illustration of a newspaper laid out for printing as a printed newspaper;

Fig. 2 is a simplified pictorial illustration of a folded view of the newspaper of Fig. 1 displayed on an e-Reader constructed and operative in accordance with an embodiment of the present invention;

Fig. 3 is a simplified pictorial illustration of an unfolded view of the newspaper of Fig. 2 displayed on an e-Reader constructed and operative in accordance with an embodiment of the present invention;

Fig. 4 is a simplified line drawing depicting a relationship between the size of the folded view of the newspaper, the unfolded view of the newspaper, and the e-Reader display;

Fig. 5 is a simplified depiction of a conceptualized page of a newspaper displayed in folded view;

Fig. 6 is a simplified depiction of a conceptualized page of a newspaper displayed in unfolded view;

Fig. 7 is a simplified pictorial illustration of two pages of a newspaper laid out for printing as a printed newspaper;

Figs. 8A, 8B, and 8C are three simplified illustrations of an e-Reader display snapping to second snap point and a third snap point on the two pages of the newspaper of Fig. 7;

Figure 9 is an example demonstrating the method of Figs. 7 - 8C; and

Fig. 10 is a simplified line drawing depicting a relationship between the folded view of the newspaper, the unfolded view of the newspaper, and the e-Reader display, where the unfolded view of the newspaper includes additional material viewable in a snap point.

DETAILED DESCRIPTION OF AN EMBODIMENT

Reference is made to Fig. 1, which is a simplified pictorial illustration of a newspaper laid out for printing as a printed newspaper.

When a text, such as the newspaper of Fig. 1, is displayed on an e-Reader, it is desirable to maintain, on the e-Reader, the look and feel of the page of the printed newspaper to be displayed. However, preparing the newspaper for display on the e-Reader entails enlarging the fonts of the text so that the fonts are readable on the display screen of the e-Reader. On the other hand, pictures and other graphical elements displayed on the page of the newspaper on the e-Reader might need reducing in size (for instance, to enable a picture to be displayed so that the picture fits on the e-Reader screen). Still other elements on the page of the newspaper might be appropriate for display on the e-Reader in their native sizes. The fluctuation of sizes of elements displayed on the e-Reader version of the newspaper from the actual hard copy of the newspaper makes preserving the look and feel of the newspaper for display on the e-Reader difficult.

e-Readers, smart phones, tablet computers, and similar had held devices have, in the past few years become widely available consumer devices. Typical such devices comprise a screen (which may comprise a touch screen), a central processor, software and/or hardware which renders content on the screen, and other appropriate hardware and software as is known in the art. The term "e-Reader" as used herein is understood to refer to all such devices.

VERTICALLY ORIENTED SOLUTION

Reference is now made to Fig. 2, which is a simplified pictorial illustration of a "folded" view of the newspaper of Fig. 1 displayed on an e-Reader constructed and operative in accordance with an embodiment of the present invention. The term folded (in all of its various grammatical forms) is herein understood, unless otherwise noted, to mean the that method described herein has been has been applied (when folded is used in the past tense; *mutatis mutandis* to other tenses of the verb) to the newspaper text to be displayed. In the folded view of the newspaper, the look and feel of the newspaper, as displayed on an e-Reader is preserved. In order to maintain the look and feel of the newspaper, the text of articles displayed may be truncated. By way of example, in Fig. 2, the article beneath the

headline "Kinderschänder" appears to conclude: "...molliap lorem ipsum colum dolor". Two arrows pointing down indicate that there is more text than is displayed in the present (folded) view.

The folded page provides the reader the ability to quickly scan the whole content of the page at a glance. The folded page also enables consuming page content without further interaction. Thus, content deemed important by an editor or an editorial board which lays out the newspaper will thereby be displayed so that no interruption will be necessary for consumption without further interaction by a user of the e-Reader. The e-Reader version of the newspaper is laid out, as discussed below, by "folding" the page while maintaining content deemed important, based on the printed newspaper page layout, giving higher priority to pictures, advertisements, larger text size, and so forth.

A reader of the newspaper displayed on the e-Reader is able to transition the display from the folded view of Fig. 2 to an unfolded view of the newspaper, as will be discussed with reference to Fig. 3.

Reference is now made to Fig. 3, which is a simplified pictorial illustration of an unfolded view of the newspaper of Fig. 2 displayed on an e-Reader constructed and operative in accordance with an embodiment of the present invention. It is appreciated that in Fig. 3, the article beneath the headline "Kinderschänder" no longer ends in a truncated fashion, as in Fig. 2. Rather, additional text, comprising the continuation of the article beneath the headline "Kinderschänder" now appears beneath the bottom of the article as the article appeared in the folded view of the newspaper. It is appreciated that the unfolded view contains all of the content on the page, both the content which is displayed on the corresponding version of the printed newspaper and the continuation of such content which typically appears elsewhere in the newspaper. Accordingly, an article which begins on the first page of the printed version of the newspaper and continues on a later page in the printed version of the newspaper would typically appear in a truncated form on the e-Reader folded version of the first page of the newspaper. However, the article would appear in its entirety on the unfolded page of the e-Reader version of the first page of the newspaper.

In advance of the distribution of the newspaper to e-readers, two e-Reader versions of various pages of the newspaper are prepared: a version in folded view (such as

the version depicted in Fig. 2); and a version in unfolded view (such as the version depicted in Fig. 3). As is well known, newspapers typically undergo a layout of the pages of the newspaper by an editorial board. Either a manual or a computerized layout of the pages of the newspaper is then performed on the e-Reader version of the newspaper, thereby preparing the laid out folded view and unfolded view of the e-Reader edition of the newspaper.

Preparing the folded view of the newspaper (and also determining 'snap points', as described below) is performed at an appropriate newspaper editing station, equipped with appropriate hardware and software, as is well known in the art.

The layout of the folded view of the e-Reader edition of the newspaper thereby maintains the look and feel of the newspaper page. Furthermore, the folded page allows scanning and reading newspaper page content deemed important by the editorial board by scanning the e-Reader display without requiring user interaction.

Unfolding the folded page view to the unfolded page view compliments the reading experience by providing remaining page content which is not visible in the folded page view. The process by which the unfolded page is created ensures that the unfolded page view resembles, as closely as possible, the layout of the folded page. The unfolded page is intentionally expanded only vertically, thereby creating a visual transition from the folded page view to the unfolded page view which is as seamless as is feasible. Additionally, the reader of the e-Reader version of the newspaper is able to continue reading the present page while maintaining visual orientation. It is appreciated that since the expansion of the e-Reader page from folded view to unfolded view only entails expanding the folded page along the vertical axis, there is no need for two-dimensional page scrolling in the unfolded page view. Accordingly, only vertical scrolling is needed in order to view the unfolded page in its entirety. Horizontal and combined, two-dimensional, horizontal and vertical embodiments of the present invention will be discussed below.

Accordingly, the creating of the folded page view is accomplished by following at least some of the following steps (those skilled in the art will appreciated that in certain special cases not all of the steps are required steps):

1. The laid out version of the newspaper page to be printed is proportionally shrunk in order to make the full page fit on the display of the e-Reader.

2. Text which falls below a predetermined minimum size is identified (those skilled in the art will appreciate that the determination of what size is the threshold of the minimum size is a function, at least in part, of display screen attributes and font attributes).

3. Changing the text identified in the previous step so that the size of the identified text now exceeds the predetermined minimum size. The changing in the present step typically comprises changing font attributes of the text and text block attributes of the text. It is appreciated that the changing of the text may result in a portion of the text no longer being becoming displayable in folded page view.

4. Identifying text which is no longer displayable in folded page view and adding such text to the unfolded page view.

5. Identifying column text which is beneath a minimum threshold column width, resulting from enlarging the size of the text in the previous steps, thereby creating columns that contain too few words. It is appreciated that columns that contain too few words may be visually unappealing as well as uncomfortable to read.

6. Reducing the number of columns of text identified in the previous step so that column width now exceeds the minimum threshold column width.

The amount by which any given column is widened is typically dependent on the text attributes of text in the column, both in the folded and unfolded page views, and on a page grid. The page grid is a newspaper's page layout guidelines. Thus, the page grid pertinent to the steps enumerated above will be the page grid created for the e-Reader version of the newspaper produced as described herein. As can be seen from the above steps, the e-Reader version of the page grid is typically modified to accommodate new (wider) column widths, new (reduced) number of columns, new folded/unfolded page aspect ratio, and so forth.

It is appreciated that steps 5 and 6 applies to both multiple column articles and single column articles.

7. Remaining text which does not fit is then laid out in unfolded page view, such that the remaining text is laid out consistently with the text size and column width of text displayed in folded page view.

It is appreciated that steps 5 - 7 may be performed iteratively until the folded page views and the unfolded page views are fully laid out.

An article which is displayed on a page of the newspaper (often, but not limited to, the first page of the newspaper or the first page of a section of the newspaper) which is continued elsewhere in the newspaper is formatted such that the text of article, as it appears in incomplete form (folded, in the terminology used above, and herein throughout), is modeled as if the text is in a box. The additional text, not displayed on the page of the newspaper under discussion, is then made available in its entirety in unfolded view (i.e. the article is now displayed in its complete form).

It is appreciated that the modeling of the text in a box is a convenience, and by no means should be viewed as limiting the shape of an article to a rectangle. Articles which are displayed in non-rectangular shapes, and even in irregular shapes, are modeled as though they are in a non-rectangular box, or even in an irregularly shaped box.

Articles beneath the box comprising the text of the article are slid down the page of the newspaper. It is appreciated that the folded page is a shorter version of the page (relative to the unfolded page), and is typically designed to fit in the display of the e-Reader. By contrast, in unfolded view, articles which appear on the folded page in incomplete form are laid out on the page in unfolded form. However, the page in unfolded form no longer fits within the display area of the e-Reader. The relationship between the two different views and the display of the e-Reader is depicted in Fig. 4.

Reference is now made to Fig. 4, which is a simplified line drawing depicting a relationship between the size of the folded view of the newspaper, the unfolded view of the newspaper, and the e-Reader display. In Fig. 4, regions of the unfolded page which exceed the area of the e-Reader display are depicted with dotted lines.

A person using the e-Reader to read the newspaper is able to transition between the folded page view and the unfolded page view by tapping the page with a finger or by using a pointing device to click on the page, or using any other technique as is known

in the art. For example and without limiting the generality of the foregoing, if the word "cyber-terrorism" were to appear on a folded page at a hypothetical coordinate of (173, 32), clicking, tapping, or touching, etc., the folded page at the word "cyber-terrorism" causes the unfolded page to open up such that the word "cyber-terrorism" remains at the coordinate of (173, 32). Additional material only appears below this point on the display. Tapping the unfolded page returns the display to folded page view. The point which was tapped will remain in the same position as the page folds and/or unfolds, as described above.

It is appreciated that, in some embodiments of the present invention, the transition from folded page view to unfolded page view may occur in a smooth, animation-like fashion.

Likewise, the person using the e-Reader to read the newspaper is able to scroll the unfolded version of the page by dragging his finger or other appropriate pointing device up and down the display window in order to "drag" the page up and down.

Reference is now made to Figs. 5 and 6. Fig. 5 is a simplified depiction of a conceptualized page of a newspaper displayed in folded view. Fig. 6 is a simplified depiction of a conceptualized page of a newspaper displayed in unfolded view. On the conceptualized pages depicted in Figs. 5 and 6, six articles, A - F appear. Article B shows 10 lines of text but there are an additional 5 lines of additional material not shown. Similarly, article D shows 6 lines but there are an additional 6 lines not shown on the page. It is appreciated that when the additional material of article B appears on the screen, all articles on the page beneath article B will appear shifted down to make room for the additional material. Likewise, when the additional material of article D appears on the screen, all articles on the page beneath article D will appear shifted down to make room for the additional material.

As a result of the shifting caused by the appearance of articles B and D, white space will appear beneath articles A and C (see Fig. 6). The white space may be filled by placing advertisements of appropriate size and shape in the white space. A database of advertisements is maintained with a variety of differently sized and shaped advertisements for the same products, goods, services, and so forth may be maintained, and the advertisements which are placed in the white spaces can be selected from the database. An

advertisement which appeared on the page but was displaced out of the viewing window may be given preference for having a related advertisement appear in the white space.

HORIZONTALLY ORIENTED SOLUTION

Reference is now made to Fig. 7, which is a simplified pictorial illustration of two pages of a newspaper laid out for printing as a printed newspaper. Whereas a vertically oriented solution of e-Reader formatting is appropriate for the newspaper page depicted in Fig. 1, a horizontally oriented solution seems more appropriate for the newspaper page depicted in Fig. 7. It is appreciated that the newspaper page depicted in Fig. 7 comprises articles which span across both the verso (left hand page) and recto (right hand page) pages of the depicted newspaper page. For instance, the picture in the center of the top portion of the depicted newspaper page appears half on the verso page and half on the recto page. Likewise, the article having the title, "Nur für Sieger Sodat schien die Sonne" on the bottom portion of the depicted newspaper page, has the bulk of its text on the verso page, while the bulk of its associated pictures appear on the recto page.

In one embodiment of the present invention, when scrolling on a horizontally oriented page, such as the page depicted in Fig. 7, rather than scrolling a fixed amount, the system snaps / scrolls only enough (hereinafter referred to as snapping) to bring the next item of interest or importance into the display window.

Reference is now made to Figs. 8A, 8B, and 8C, which are three simplified illustrations of an e-Reader display snapping to a second snap point and a third snap point on the two pages of the newspaper of Fig. 7. Turning specifically to Fig. 8A, the grayish box covering the left-most side of the newspaper page represents the portion of the newspaper of Fig. 7 displayed in the e-Reader display window. At the start of viewing the page of Fig. 7, snap point A is the start of the page. As the display is moved to the right (Fig. 8B), the picture which was half off the display in Fig. 8A is now fully displayed. Snap point B is now the start of the page. Finally, as the display is moved to the right (Fig. 8C), the article which was entirely off the display in Fig. 8A is now entirely on the display. Furthermore, as the right-border of the page newspaper is displayed, no further right oriented horizontal scrolling is possible.

The method for determining the snap points (points A, B, and C of Figs. 8A, 8B, and 8C) is now discussed. The left edge of the display window starts on the extreme left edge of the newspaper page to be displayed. The display window is moved to the right along the newspaper page such that the left side of the page displayed is aligned to a column of text or graphic element. If snapping were to be continued to the next column of text or graphic element, the amount of text and graphic elements to display window of the e-Reader would exceed the width of the display window of the e-Reader. Alternatively, the end of a page (or group of pages displayed together in horizontally oriented scrolling), which was at least partially off of the e-Reader display screen prior to the last snapping action is now displayed on the e-Reader display.

Reference is now made to Fig. 9, which is an example demonstrating the method of Figs. 7 - 8C. It is appreciated, in light of Figs. 8A, 8B, and 8C that snap point A is the beginning of the page of text. It is appreciated that the newspaper depicted in Fig. 9 is depicted in a language where the text runs from left to right. In texts in those languages which are written from right to left, or from top to bottom, snap point A would be located in a corresponding, appropriate location for the language in question.

With snap point A as the beginning of the page of text depicted in Fig. 9, moving to the right, the picture identified as page element 2, was previously 50% off the display (see Fig. 8A). After a first snap to snap point B, page element 2 is now entirely displayed. However, page element 3 is now mostly off the display (see Fig. 8B). Accordingly, a second snap is possible, to move to snap point C. Again, the picture identified as page element 2, is now 50% off the display (see Fig. 8C; it is noted that the half of the picture identified as page element 2 which was off the display in Fig. 8A is not the same half of the picture identified as page element 2 off the display in Fig. 8C). The right side of the display is now at the end of the page (see the discussion above about non-left-to-right languages).

Thus, in order to prepare the page of text for viewing in a system implementing a snap point oriented horizontal scrolling solution, the following steps are taken:

All of the meaningful vertical borders in the page are identified (see Fig. 9 for one example of identifying of vertical borders of page elements).

Articles on the left side of the printed page and left page borders are aligned to the left edge of the display screen.

Articles on the right side of the printed page and right page borders are aligned to the right edge of the display screen.

Additional snap points may be identified based on a left side vertical border of the article (assuming a left-to-right oriented language) and added to the page as needed.

If there is an overlap of displays caused by some snap points being close to each other according to a predetermined distance then excess snap points are eliminated.

Alternatively, a predetermined maximum number of snap points may be configured for a particular page. For instance, a page such as the page depicted in Figs. 7 - 9 may have a predetermined maximum of three snap points.

In some cases, elimination of snap points may be determined on a priority basis. For instance the elimination of the extra points should be done by priority: high to low: spread borders (for instance the left border of the verso page and the right border of the recto page), borders of articles that spread across 2 pages of a spread (for instance snap point B with respect to page elements 2 and 5), main story article borders (can be determined by article size or by title font size), smaller article borders, inner column borders.

It is appreciated that the page of text might comprise page elements such as newspaper articles or pictures which are slightly wider than the width of the display window of the e-Reader. In such a case, the page element might be slightly shrunk in order to fit the width of the display window of the e-Reader, thereby eliminating the need to snap to a snap point in order to view the entire page element. The shrinking of the page element can be done when the folded and unfolded pages are prepared by manipulating the page grid of the folded and unfolded pages in such a way that the horizontal distance between the column borders containing the relevant page element is reduced in order to match the width of the display window of the e-Reader. Alternatively, the entire page can be slightly shrunk, both

horizontally and vertically, either at a server creating the folded and unfolded pages, or at the client which is displaying the pages on the e-Reader.

HORIZONTALLY AND VERTICALLY ORIENTED SOLUTION

It is appreciated that in some embodiments of the present invention a combination of the vertically oriented solution and horizontal oriented solution described above may be combined. For example and without limiting the generality of the foregoing, in certain cases, the bulk of a page might be adapted to for display based on the vertically oriented solution described above, but certain texts or pictures may be deemed to be candidates for both horizontal and vertical orientation. The most common case of such page elements which might be deemed to be candidates for both horizontal and vertical orientation would be double page spreads where articles and pictures are laid out across page borders. Horizontally snapping can be employed when viewing either folded pages or unfolded pages, and the snap points in both cases should be the same. It is appreciated that horizontal snapping does not replace vertical scrolling and vice versa since the horizontal snapping provides a method for viewing articles that spread across multiple pages while vertical scrolling provides a method to view the entire page text in the unfolded page format, which otherwise does not fit into the folded page due to the increase in font size.

For instance, an article such as the article depicted as page element 5 in Fig. 9 might not entirely fit into the unfolded view of the page, as seen, for instance in Fig. 4. Reference is now made to Fig. 10, which is a simplified line drawing depicting a relationship between the folded view of the newspaper, the unfolded view of the newspaper, and the e-Reader display, where the unfolded view of the newspaper includes additional material viewable in a snap point. A page such as that depicted in Fig. 10 illustrates one embodiment of a combination of the horizontal and the vertical solutions presented herein.

It is appreciated, however, that a creating a folded and unfolded vertically oriented page typically changes the locations and sizes of the articles on the page, since a page layout grid changes when modifying the page (such as, but not limited to widening single columns of text, and so forth, as described above).

Accordingly, when creating a folded and unfolded vertically oriented page combined with creating a horizontally oriented page with snap points, snap points are determined based on the folded/unfolded page format, and not based on the format of the original newspaper layout.

In e-Reader devices comprising a gaze tracking system, the e-Reader may track where a user is looking on the e-Reader. The gaze tracking system may also track when the e-Reader is brought closer to the user or moved further away from the user. Based on the gaze tracking the page displayed on the e-Reader display can be displayed in folded or unfolded mode when the e-Reader is moved closer to, or further from the user. Additionally, the e-Reader display may snap to a next snap point, either to the right or to the left, by determining where the user's gaze is oriented.

It is appreciated that in some cases, scroll points can be implemented on a sphere or a cylinder, for example and without limiting the generality of the foregoing, a world atlas having snap points at the edges of continents, or an anatomical atlas, where snap points would conform to anatomical structures depicted in the anatomical atlas.

The present invention, as disclosed herein, may be embodied in hardware (including specialized hardware designed for operation in an e-Reader), or software, or a combination thereof.

It is appreciated that various features of the invention which are, for clarity, described in the contexts of separate embodiments may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment may also be provided separately or in any suitable subcombination.

It will be appreciated by persons skilled in the art that the present invention is not limited by what has been particularly shown and described hereinabove. Rather the scope of the invention is defined by the appended claims and equivalents thereof:

What is claimed is:

CLAIMS

1. A method for laying out a text for displaying on an e-Reader, the method comprising:

receiving a laid out version of the text, the laid out version being laid out for printing, the laid out version comprising articles to be printed on a first page of text, the first page of text comprising a plurality of articles, each one of the plurality articles being one of: fully displayed on the first page of text; and continued on a second page of text;

preparing a first e-Reader page view and a second e-Reader page view for displaying on the e-Reader:

the first e-Reader page view comprising any of truncated and full versions of the plurality of articles; and

the second e-Reader page view corresponding to the first e-Reader page view, the second e-Reader page view comprising full versions of the plurality of articles, the preparing comprising:

a) proportionally shrinking the laid out version of the text whereby the laid out version of the text is made to fit on a display of the e-Reader;

b) identifying a first group of articles, the first group of articles comprising articles that fall below a predetermined minimum text size on the display of the e-Reader;

c) changing the identified first group of articles so that the identified first group of articles exceed the predetermined minimum text size on the display of the e-Reader;

d) truncating the changed identified first group of articles in the first e-Reader page view;

e) maintaining a complete version of the truncated first group of articles in the second e-Reader page view;

f) identifying a second group of articles, the second group of articles comprising articles comprising column text that falls beneath a minimum threshold column width;

g) reducing the number of columns in any article among the second group of articles identified as comprising column text that falls beneath the minimum threshold column width;

h) truncating the changed identified articles among the second group of articles in the first e-Reader page view;

i) maintaining a complete version of the truncated articles among the second group of articles in the second e-Reader page view;

j) iteratively repeating steps f - i until the first e-Reader page view and the corresponding second e-Reader page view are completely laid out;

k) producing a first file comprising the text in the first e-Reader page view and a second file comprising the text in the second e-Reader page view,

wherein the second e-Reader page view comprises a vertical expansion of the first e-Reader page view.

2. The method according to claim 1 and wherein the predetermined minimum text size on the display of the e-Reader is dependent, at least in part, on any of: display screen attributes; and font attributes.

3. The method according to any of claim 1 - 2 and wherein characters of the identified articles in step e is changed by changing, at least in part, any one of: changing font attributes of the characters; and changing text block attributes of the characters.

4. A system for laying out a text for displaying on an e-Reader, the system comprising:

a receiver comprised in an editing station, the receiver being operative to receive a laid out version of the text, the laid out version being laid out for printing, the laid out version comprising articles to be printed on a first page of text, the first page of text comprising a plurality of articles, each one of the plurality articles being one of: fully displayed on the first page of text; and continued on a second page of text;

the editing station being operative to prepare a first e-Reader page view and a second e-Reader page view for displaying on the e-Reader:

the first e-Reader page view comprising any of truncated and full versions of the plurality of articles; and

the second e-Reader page view corresponding to the first e-Reader page view, the second e-Reader page view comprising full versions of the plurality of articles, the editing station being operative to:

a) proportionally shrink the laid out version of the text whereby the laid out version of the text is made to fit on a display of the e-Reader;

b) identify a first group of articles, the first group of articles comprising articles that fall below a predetermined minimum text size on the display of the e-Reader;

c) change the identified first group of articles so that the identified first group of articles exceed the predetermined minimum text size on the display of the e-Reader;

d) truncate the changed identified first group of articles in the first e-Reader page view;

e) maintain a complete version of the truncated first group of articles in the second e-Reader page view;

f) identify a second group of articles, the second group of articles comprising articles comprising column text that falls beneath a minimum threshold column width;

g) reduce the number of columns in any article among the second group of articles identified as comprising column text that falls beneath the minimum threshold column width;

h) truncate the changed identified articles among the second group of articles in the first e-Reader page view;

i) maintain a complete version of the truncated articles among the second group of articles in the second e-Reader page view;

j) iteratively repeat steps f - i until the first e-Reader page view and the corresponding second e-Reader page view are completely laid out;

k) produce a first file comprising the text in the first e-Reader page view and a second file comprising the text in the second e-Reader page view,

wherein the second e-Reader page view comprises a vertical expansion of the first e-Reader page view.

Respectfully submitted,

4 Blick Donnerstag, 14. Januar 2010

Scheidungskrieg

Harald L. aus Tübach SG

«Meine Ex verleumdet mich als Kinderschänder»

Harald L. (59) erzählt, wie seine Ex die gemeinsame Tochter Diana (8) als Waffe einsetzt und ihn damit stark verletzt.

Von Karin Rothenberger

Die Trennung liegt 3093 Tage zurück. Seither hat Harald L. seine Tochter Diana nur noch selten gesehen. Er sagt: «Meine Ex verleumdet mich als Kinderschänder.»

Keine Übergabe. Keine seine Tochter Diana (8) sehen. Als er sie verabschiedet, **sagt sie mit Tränen in den Augen,** schüttelt den Kopf und geht mit ihrer Mutter Eva Y. (Name ... Als sie ... Haustür ... Harald L. ...

Und auch heute will sie nicht, dass der Vater das kleine Diana ... Es ging ... nicht ... sagt Harald L.

Die Beiden haben nie eine ... Trennung gibt die Mutter ... **«Sie zeigte mich an wegen sexuellen Missbrauchs an meinem Kind»,** erklärt Harald L. ... Als der Polizei vor allem darum ... Beweise ...

Der Staatsanwaltschaft ... Kinder ... Harald L. ...

Harald L. ... Verleumdungen ...

Am 21. Januar ... Mutter ... Verleumdungen vorliegen.

Harald L. ... weiß auch ... Beschuldigten ...

«Meine Ex wurde verurteilt, hörte aber nicht auf mit den Verleumdungen.»

Harald L. (59)

Verschiedene, der ... bestätigen, dass die Kind-Angst von ... sind die Behörden glauben ... meint Harald L. ... Seither ... Kindheit ... noch ... Kontakt ...

«Der Neue meiner Ex-Frau ist jetzt der Papi meines Sohnes Tim»

Leicht hat auch die Kalte ... Scheidung ... Schatten ... Tim ...

«Meine Töchter haben jetzt Angst vor mir»

Ingenieur Jan S. (Name ...)

Trennung: Das rät die Expertin

Was können Väter tun, wenn sie um ihre Kinder kämpfen? Familienberaterin Karin Schmid (44) weiss Rat.

Blick: Frau Schmid, beraten Sie viele Männer, die sich ... Kindkämpfen?

Karin Schmid: Ja. Immer mehr ... professionelle Unterstützung, wenn ... nicht weiter wissen. Das ist sehr gut.

Warum kämpfen sie sich ... kämpfen?

Väter stehen sich ... wenig ... wissen, wie wichtig ... für ihre Kinder sind. Einerseits ... Vaters ... Andererseits ... Ämter auch ... Unterstützung ... Mädchen ... Kinder ... Vater ... Gericht.

Wie beraten Sie Väter?

Wenn ... Gespräch ... sie, sie ... Vater ... wichtig ... Rolle ... ist. Und dann ... auf ... Fall aufgeben ... Dann ... ich ... Anwalt, ... Mittel ... Ich ... einfach ... Gericht.

Wie sehen Sie ...?

Man kann ... Muster ... Beide ... Jeden ... Ich ... Kindeswohl ... Und ... Probleme ... Kinder ... Mutter ... Kinder ... Ehe ... Mutter ... Ich ... Vater ... Gegner ... Verantwortlich ... Dann ... Ich ... Verantwortung ...

Und wenn diese Bemühungen nichts helfen?

Dann hat man eine Reihe von ... Möglichkeiten. Der Vater kann sich ... Vermittlungsstelle ... wenden, wenn auch die ... Ich ... Verantwortung ...

Welche Fehler sollte man vermeiden?

Ein Kind ... sollte ... Seiten ... Scheidung ... sollte ... auf ... Kinder ... Ich ... Kinder ... Auch ... Mitte ... Ich ... Kinder ... Ich ... Kinder ... Ich ... Kinder ...

Interview Karin Rothenberger

Morgen BLICK-Telefon-Aktion

Wie dringlich die Fragen rund ums Scheidungsrecht sind, zeigt BLICK diese Woche mit der Artikelserie «Krieg ums Kind». Höchste Zeit, dass betroffene Leserinnen und Leser Experten ihre Fragen stellen können. Deshalb richtet BLICK morgen Freitag von 11 bis 13 Uhr eine Hotline zum Thema ein. Die Telefonnummer finden Sie morgen im BLICK. Auskunft geben: Werner Huwiler, Geschäftsleiter und Sozialarbeiter Männebüro Zürich; Walter Grisenti, Sozialarbeiter und Geschäftsleiter Männebüro Region Basel, Basel; Nicole Fernández, Juristin und BLICK-Beraterin; Anita Hebert, Sozialarbeiterin, Versicherungsfachfrau und BLICK-Beraterin.

FIG. 1

iPad
7:51 AM
4 Blick
Scheidungskrieg
Harald L. aus Tübach SG
«Meine Ex verleumdet mich als Kinderschänder»
Harald L. (59) erzählt, wie seine Ex die gemeinsame Tochter Diana (8) als Waffe einsetzt und ihn damit stark verletzt.
Trennung: Das rät die Expertin
«Der Neue meiner Ex-Frau ist jetzt der Papi meines Sohnes Tim»
«Meine Töchter haben jetzt Angst vor mir»
Morgen BLICK-Telefon-Aktion

FIG. 2

Scheidungskrieg

Harald L. aus Tübach SG

«Meine Ex verleumdet mich als Kinderschänder»

Trennung: Das rät die Expertin

«Der Neue meiner Ex-Frau ist jetzt der Papi meines Sohnes Tim»

«Meine Töchter haben jetzt Angst vor mir»

FIG. 3

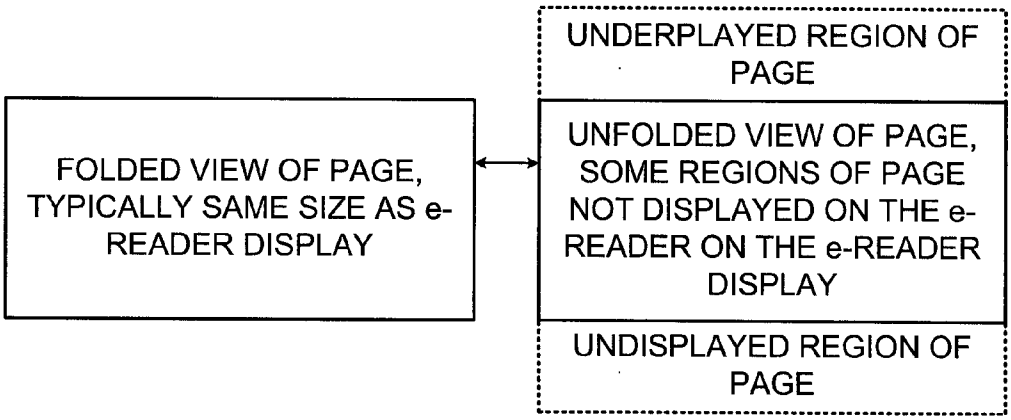
UNDERPLAYED REGION OF PAGE
FOLDED VIEW OF PAGE, TYPICALLY SAME SIZE AS e-READER DISPLAY
UNFOLDED VIEW OF PAGE, SOME REGIONS OF PAGE NOT DISPLAYED ON THE e-READER ON THE e-READER DISPLAY
UNDISPLAYED REGION OF PAGE

FIG. 4

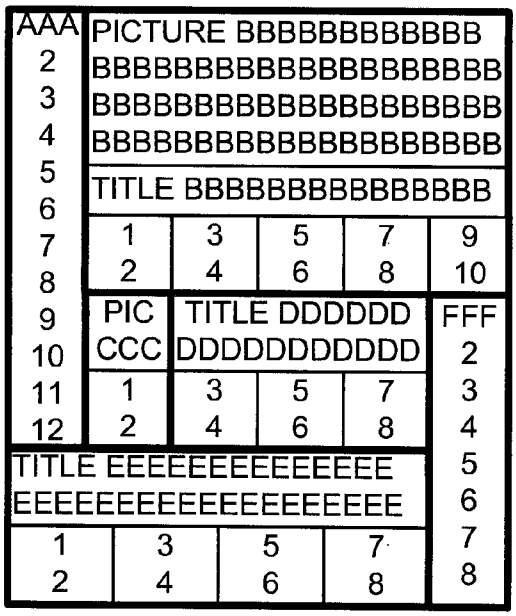
AAA
PICTURE BBBBBBBBBBB
BBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBB
TITLE BBBBBBBBBBBBBB
1 3 5 7 9
2 4 6 8 10
PIC
CCC
TITLE DDDDDD
DDDDDDDDDDD
FFF
1 3 5 7
2 4 6 8
TITLE EEEEEEEEEEEEEE
EEEEEEEEEEEEEEEEEE
1 3 5 7
2 4 6 8

FIG. 5

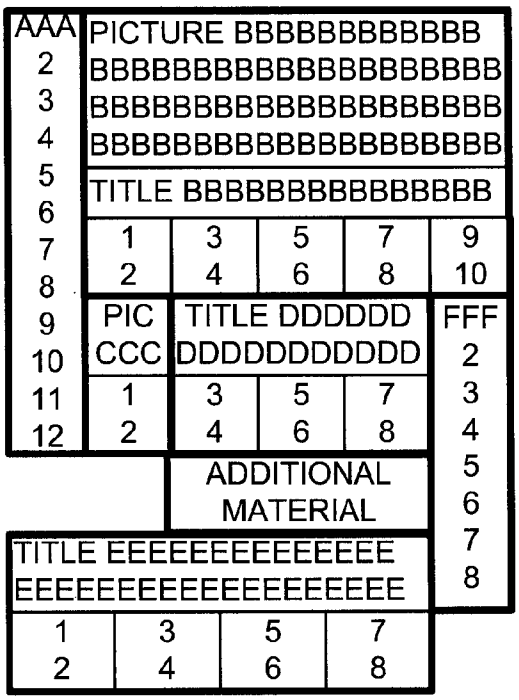
AAA
PICTURE BBBBBBBBBBB
BBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBB
TITLE BBBBBBBBBBBBBB
1 3 5 7 9
2 4 6 8 10
PIC
CCC
TITLE DDDDDD
DDDDDDDDDDD
FFF
1 3 5 7
2 4 6 8
ADDITIONAL
MATERIAL
TITLE EEEEEEEEEEEEEE
EEEEEEEEEEEEEEEEEEE
1 3 5 7
2 4 6 8

FIG. 6

Sport
Kemen und Zurbriggen zanken um den entschärften Zielsprung
Zoff ums Lauberhorn
70 Millionen für Scharapowa
Sie ist blond, sie hat eine tolle Figur und bald ein paar Millionen mehr auf dem Bankkonto – die Tennisspielerin Maria Scharapowa kassiert ab.
Nur für Sieger schien die Sonne
80 Jahre Lauberhorn – Die grosse BLICK-Serie. Teil 3
Residieren in der Vergangenheit

FIG. 7

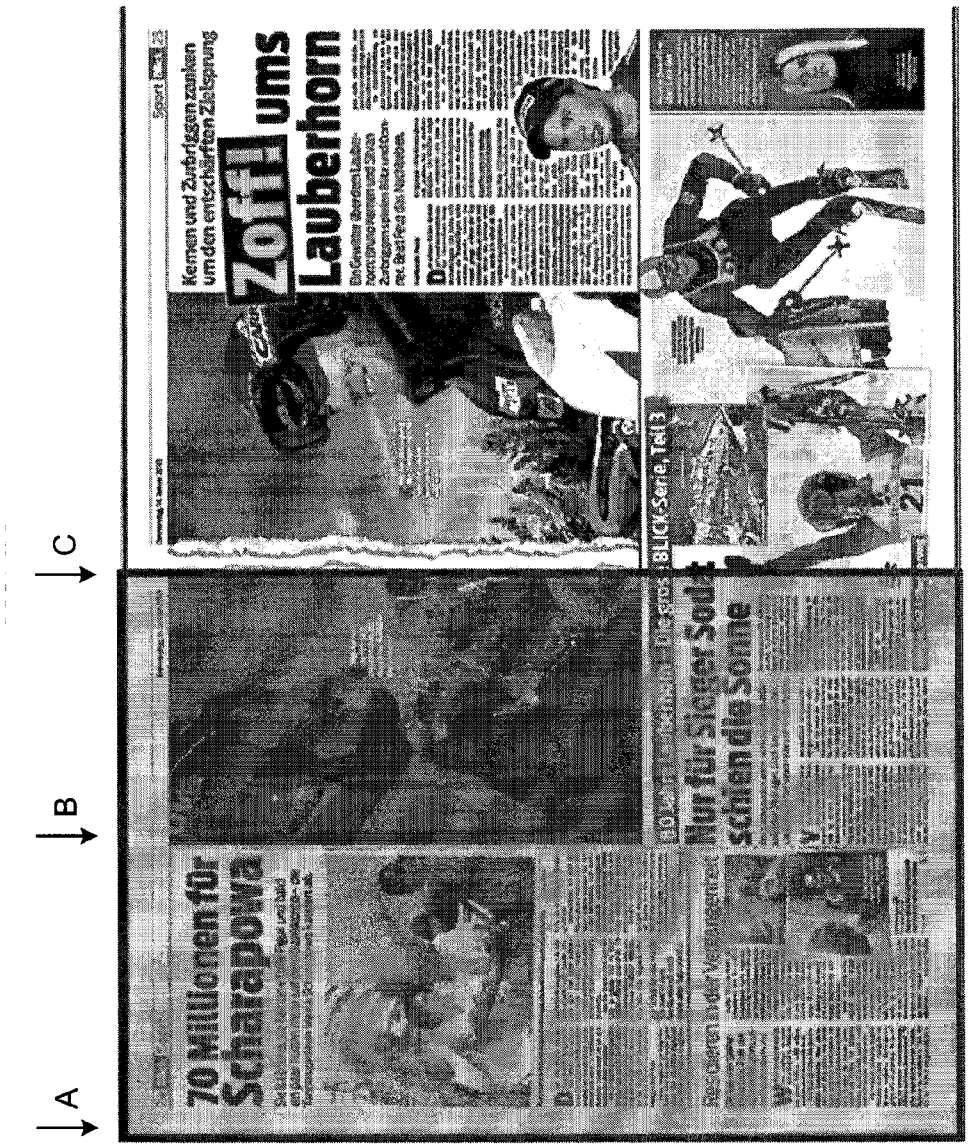
A
B
C
70 Millionen für Scharapowa
Nur für Sieger Sodat schien die Sonne
Zoff! ums Lauberhorn
Kemen und Zurbriggen zanken um den entschärften Zielsprung

FIG. 8A

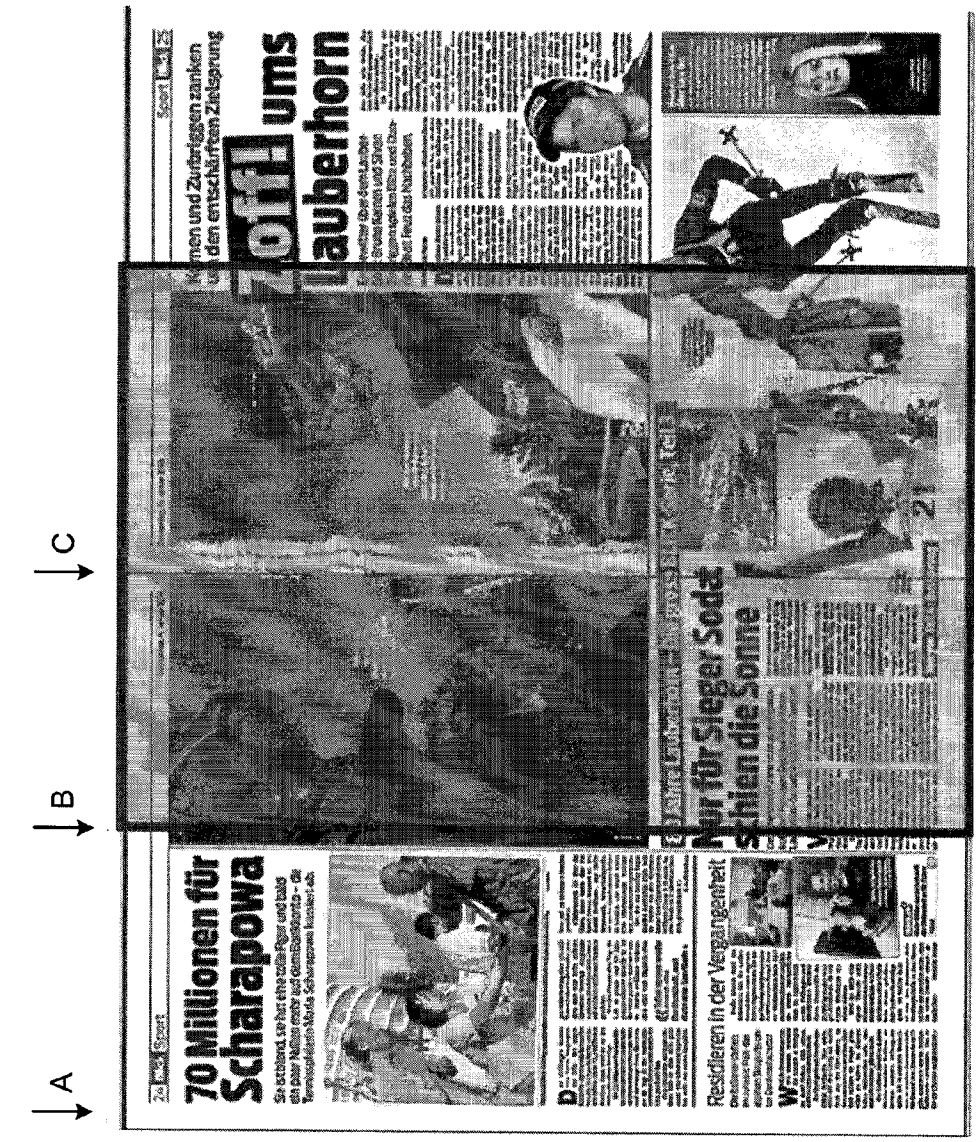
A
B
C
70 Millionen für Scharapowa
Residieren in der Vergangenheit
Nur für Sieger Sodat
schien die Sonne
Zoff! ums Lauberhorn

FIG. 8B

A
B
C
70 Millionen für Scharapowa
Residieren in der Vergangenheit
Nur für Sieger Soda
schien die Sonne
Zoff ums Lauberhorn

FIG. 8C

A
B
C
1
2
3
4
5
6
70 Millionen für Scharapowa
Zoff ums Lauberhorn
ur für Sieger Soda
chien die Sonne

FIG. 9

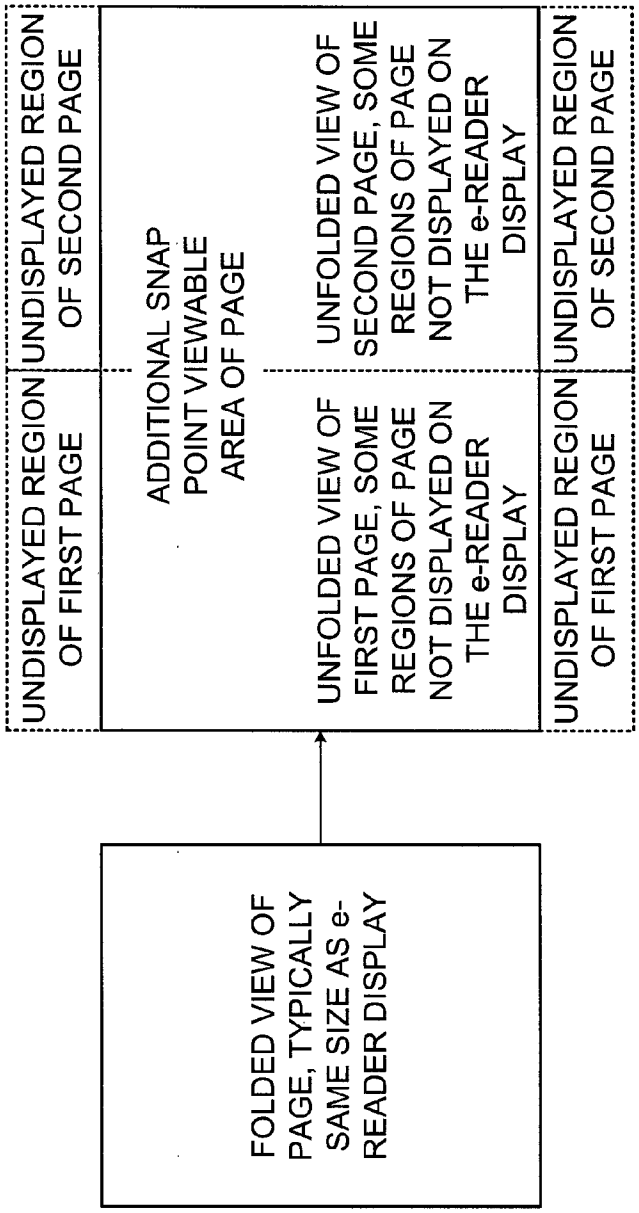
UNDISPLAYED REGION OF FIRST PAGE
UNDISPLAYED REGION OF SECOND PAGE
ADDITIONAL SNAP POINT VIEWABLE AREA OF PAGE
UNFOLDED VIEW OF FIRST PAGE, SOME REGIONS OF PAGE NOT DISPLAYED ON THE e-READER DISPLAY
UNFOLDED VIEW OF SECOND PAGE, SOME REGIONS OF PAGE NOT DISPLAYED ON THE e-READER DISPLAY
UNDISPLAYED REGION OF FIRST PAGE
UNDISPLAYED REGION OF SECOND PAGE
FOLDED VIEW OF PAGE, TYPICALLY SAME SIZE AS e-READER DISPLAY

FIG. 10