



US006976228B2

(12) **United States Patent**
Bernhardson

(10) **Patent No.:** **US 6,976,228 B2**
(45) **Date of Patent:** ***Dec. 13, 2005**

(54) **GRAPHICAL USER INTERFACE
COMPRISING INTERSECTING SCROLL
BAR FOR SELECTION OF CONTENT**

6,483,548 B1 * 11/2002 Allport 348/564
6,594,825 B1 * 7/2003 Goldschmidt Iki et al. ... 725/53
6,597,358 B2 * 7/2003 Miller 345/427

(75) Inventor: **Marcus Bernhardson**, Linköping (SE)

FOREIGN PATENT DOCUMENTS

(73) Assignee: **Nokia Corporation**, Espoo (FI)

EP 0 845 604 3/1995
EP 0645604 3/1995 G01C 21/20
WO 0065429 11/2000 G06F 3/033

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 639 days.

* cited by examiner

This patent is subject to a terminal disclaimer.

Primary Examiner—Kristine Kincaid
Assistant Examiner—Boris Pesin
(74) *Attorney, Agent, or Firm*—Antonelli, Terry, Stout and Kraus, LLP.

(21) Appl. No.: **09/891,330**

(57) **ABSTRACT**

(22) Filed: **Jun. 27, 2001**

(65) **Prior Publication Data**

US 2003/0001898 A1 Jan. 2, 2003

(51) **Int. Cl.**⁷ **G06F 3/00**; G06F 9/00;
G06F 17/00

(52) **U.S. Cl.** **715/830**; 715/841; 715/836;
715/833; 715/786; 725/40; 725/53

(58) **Field of Search** 345/841, 427,
345/336; 725/40, 53; 348/564; 715/830,
715/833, 786

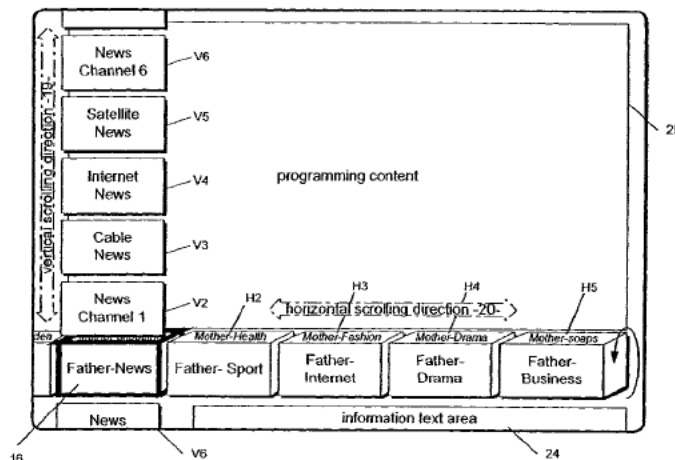
(56) **References Cited**

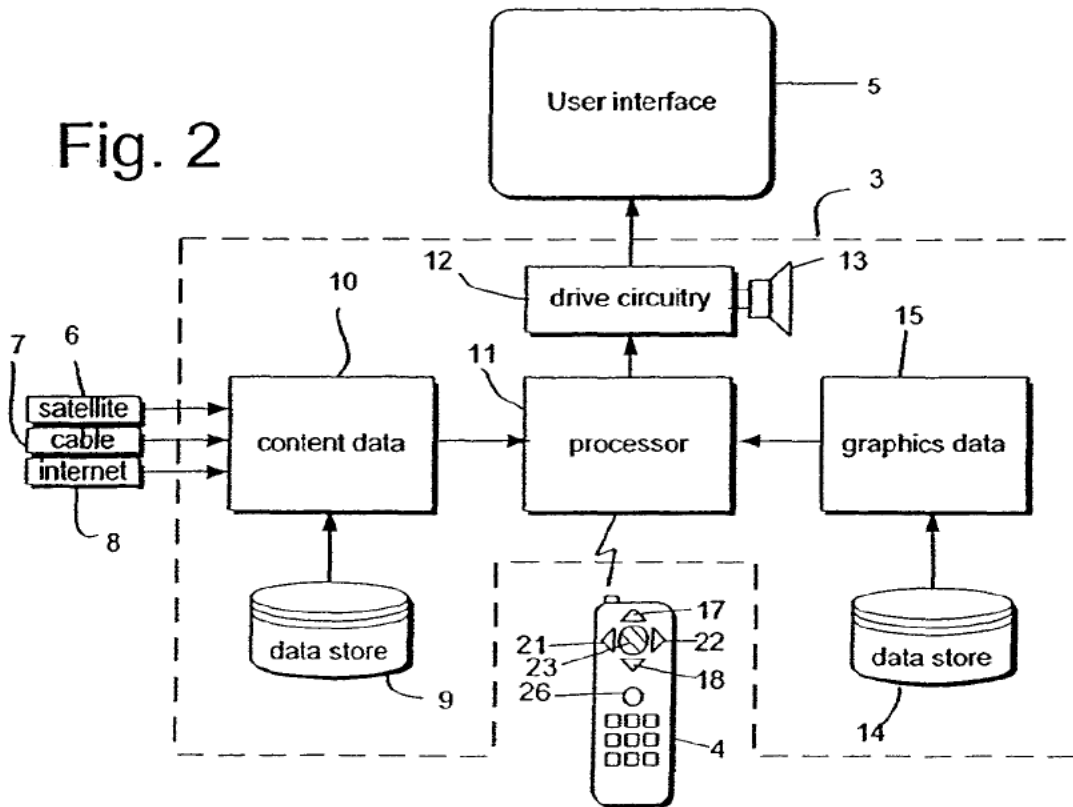
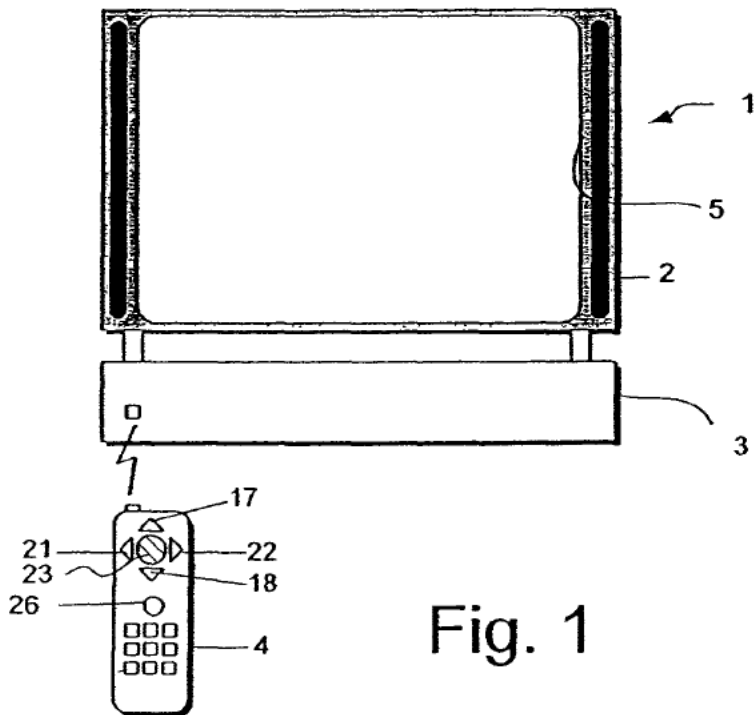
U.S. PATENT DOCUMENTS

5,059,965 A 10/1991 Geiser 340/995
5,283,560 A 2/1994 Bartlett 345/113
5,289,573 A 2/1994 Kataoka et al. 395/156
5,452,414 A * 9/1995 Rosendahl et al. 345/836
5,623,613 A * 4/1997 Rowe et al. 345/841
5,677,708 A 10/1997 Matthews, III et al. 345/115
5,737,029 A 4/1998 Ohkura et al.
5,812,123 A 9/1998 Rowe et al.
6,243,071 B1 6/2001 Shwartz et al.
6,412,110 B1 * 6/2002 Schein et al. 725/40

A digital interactive television set has a graphical user interface for displaying content from a plurality of different sources on its screen e.g. from digital satellite or cable broadcasts or through the Internet, the interface comprising: a focus region (16), and horizontally and vertically extending scroll bars (H, V) which each comprise a plurality of scroll bar elements that can be scrolled successively through the focus region, the scroll bar elements of the horizontal scroll bar signifying groupings of content sources. Elements of the horizontal scroll bar are scrolled individually into the focus region, and the scroll bar elements of the vertical scroll bar signify content sources which are included within a grouping thereof associated with the individual element of the horizontal scroll bar, so that the scroll bar elements of the vertical scroll bar can then be scrolled through the focus region to select a content source of the grouping. The scroll bar elements of the horizontal scroll bar comprise a three dimensional depiction of more than one of the content source groupings, and an individual one of the groupings may be selected from the three dimensional depiction for the focus region. The three dimensional elements are the horizontal scroll bar may comprise rectangular blocks that are rotatable about a common longitudinal axis.

23 Claims, 3 Drawing Sheets





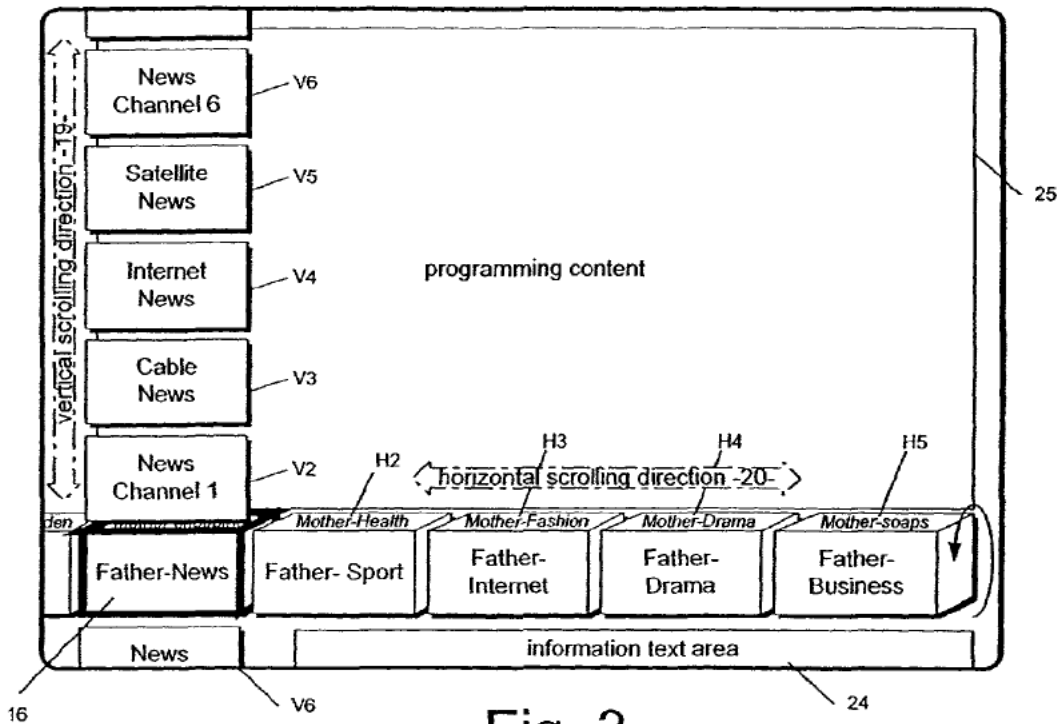


Fig. 3

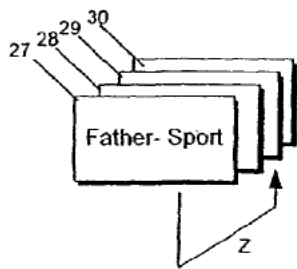


Fig. 5

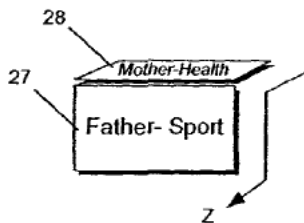


Fig. 6

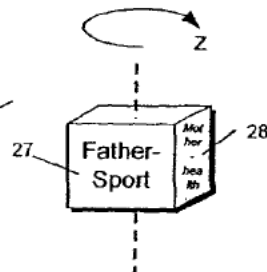


Fig. 7

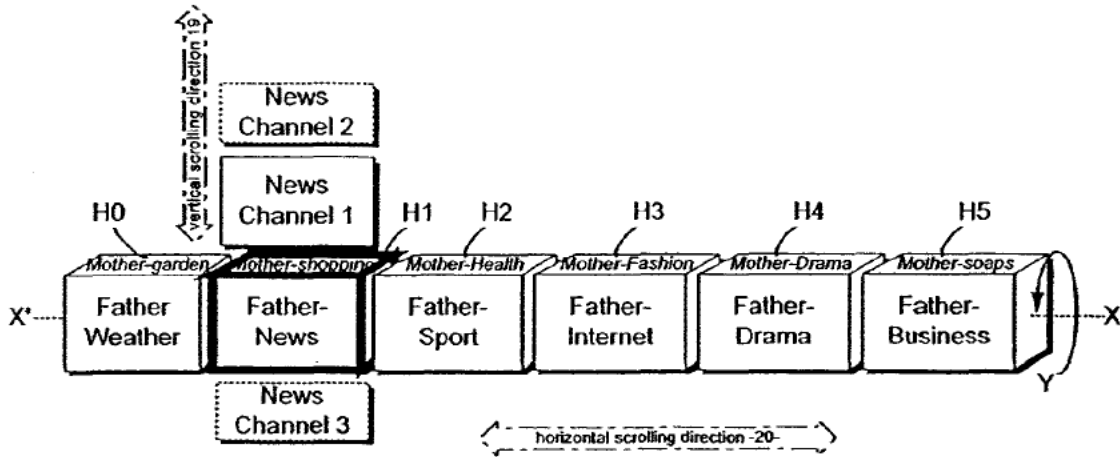


Fig. 4A

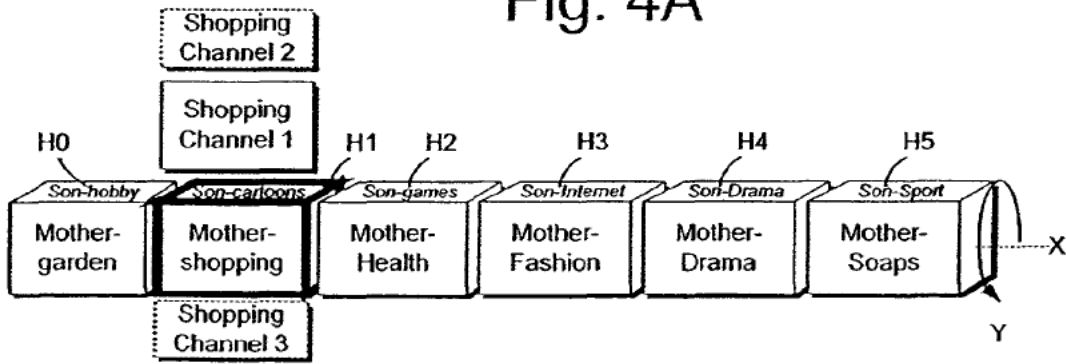


Fig. 4B

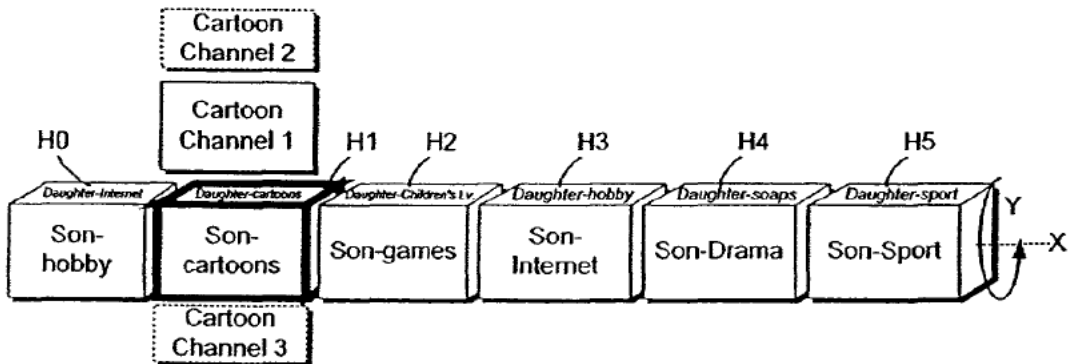


Fig. 4C

**GRAPHICAL USER INTERFACE
COMPRISING INTERSECTING SCROLL
BAR FOR SELECTION OF CONTENT**

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to providing a graphical user interface for selecting content from a plurality of content sources and has particular but not exclusive application to an interactive multi-channel television set for selecting content from a variety of different sources such as digital television broadcast channels, pre-recorded content and the Internet.

2. Description of the Prior Art

Multiple channel television sets which can receive a multiplicity of digital broadcast channels via terrestrial broadcasts, satellite or cable are becoming popular. Very large numbers of channels can be transmitted by digital techniques, and so improved channel management systems are needed to enable the viewer to make an informed selection without having to surf all of the available channels. The television set can also be used to provide Internet access so it is desirable to provide a system which can bookmark individual web sites and pages that are of interest to the user.

Proposals have been made to provide a conventional computer keyboard for connection to a television set in order to enable management of the Internet and channel access. However, conventional television sets are usually provided with a handheld remote control device that communicates with the television set through an infrared link. The handheld device has limited functionality as compared with a conventional keyboard but is more convenient to use than the keyboard in most viewing situations.

International Published Application WO 00/65429 discloses a graphical user interface for display on a screen such as the monitor of a television set, in which object fields corresponding to pre-defined choices of content sources is displayed in a vertical column of object fields and a horizontal row of subordinate object fields. The row and the column extend along vertical and horizontal side edges of the display screen respectively. The row and the column intersect in a focus area and are each scrollable that is act as scroll bars so that the individual object fields can be scrolled into the focus area. Each of the object fields in the column may define a general group of content sources and thus may act as a folder which contains a number of individual bookmarks for Internet sites and channels of interest to the user. When the individual object field or folder is brought into the focus area by scrolling the vertical scroll bar, the horizontal scroll bar is populated with bookmarks associated with the folder. The user can then scroll the horizontal scroll bar to bring the bookmarks into the focus area and then select the bookmark in the focus area. The bookmark in the focus area may itself contain a number of sub-object fields, and if so, these are then displayed in the object fields of the vertical scroll bar so that the vertical scroll bar can again be scrolled in order to make a selection from them.

This configuration has the advantage that the scroll bars, which extend vertically and horizontally, can conveniently be controlled by the conventional vertical and left and right scrolling or arrow keys of the handheld remote control device and thus can be operated intuitively by the user. However, the arrangement has the disadvantage that because successive selections of the vertical and horizontal scroll

SUMMARY OF THE INVENTION

The invention provides a graphical user interface which may be used to select content sources which is easier for the user to navigate.

Broadly stated, the invention provides a device to provide a graphical user interface for selecting content from a plurality of sources thereof, the user interface comprising: a focus region, and first and second transversely extending scroll bars which each comprise a plurality of scroll bar elements that can be scrolled successively through the focus region, the scroll bar elements of the first scroll bar signifying groupings of content sources, such that when elements of the first scroll bar are scrolled individually into the focus region, the scroll bar elements of the second scroll bar signify content sources which are included within a grouping thereof associated with the individual element of the first scroll bar, whereby the scroll bar elements of the second scroll bar can be scrolled through the focus region to select a content source of the grouping, at least one of the scroll bar elements of the first scroll bar comprising a multiple depiction of more than one of the content source groupings, whereby an individual one of the groupings may be selected from the multiple depiction for the focus region.

The multiple depiction of the content source groupings may comprise a three dimensional depiction such that the scroll bar elements of the first scroll bar include facets that signify the individual groupings of the content sources. The facets may be associated with respective different users such as different family members

The scroll bar elements may be polygonal and rotatable about a common axis extending longitudinally of the first scroll bar and the elements may be rotatable in unison about the axis.

A controller, such as a wireless remote controller may be provided to enable a user to scroll the scroll bars individually through the focus region. The invention has particular application to digital television sets and set top boxes.

BRIEF DESCRIPTION OF THE DRAWINGS

Further objects and advantages of the invention will be better understood from the following detailed description given in conjunction with the accompanying drawings, in which

FIG. 1 is a schematic illustration of a television set and an associated infrared remote controller;

FIG. 2 is a schematic block diagram illustrating the circuitry of the arrangement shown in FIG. 1;

FIG. 3 is a schematic illustration of an display of the graphical user interface provided on the television set, showing vertical and horizontal scroll bars;

FIGS. 4A-C illustrate successive steps in the operation of the horizontal scroll bar shown in FIG. 3; and

FIGS. 5, 6 and 7 illustrate alternative configurations for the scroll bar elements.

**DETAILED DESCRIPTION OF THE
INVENTION**

Referring to FIG. 1, a home entertainment device 1 includes a television display monitor 2, control unit 3 and a handheld remote controller 4 coupled through a wireless link for example infrared, to the control unit 3.

The TV monitor 2 is configured to display content from

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.